THE ARCHITECT & BUILDING NEWS

IN THIS ISSUE

- ERITH LESSNESS HEATH SCHOOL
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- MODULAR CO-ORDINATION REPORT

MARCH 16, 1951 · VOL. 199 · NO. 4291 · ONE SHILLING WEEKLY

STEELWORK

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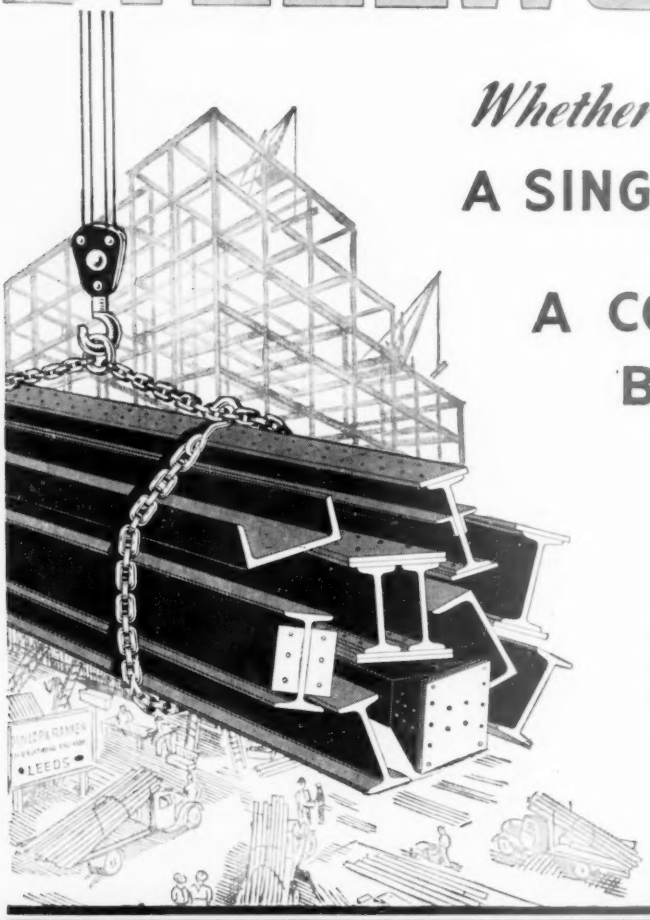
OR

A COMPLETE BUILDING



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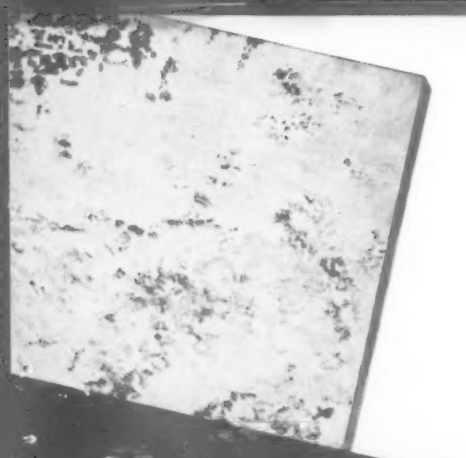

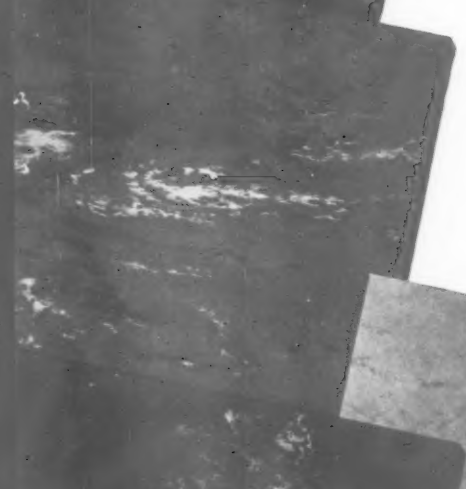

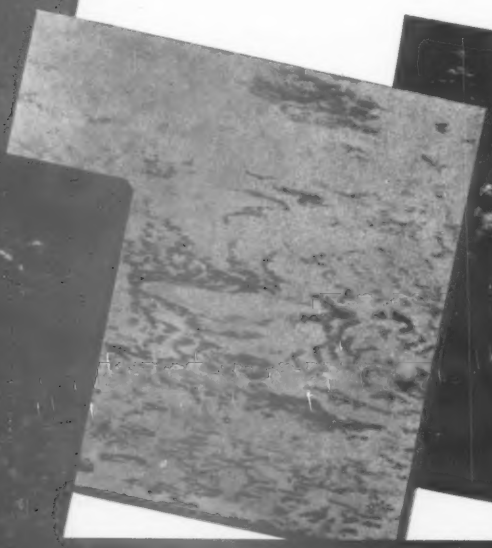

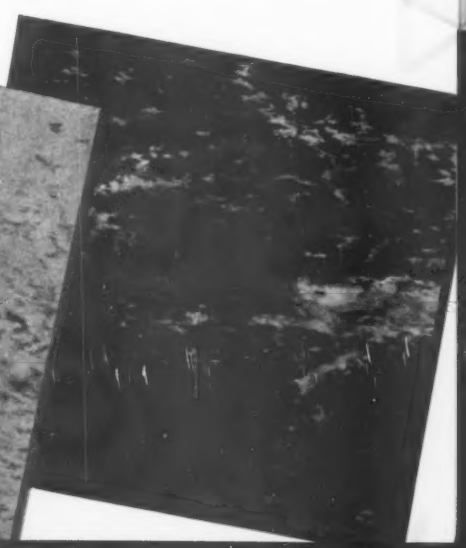

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the modern, easily-cleaned glass facing for interior and exterior walls

Range of colours available: Black, White, Green, Green Agate, Primrose, Turquoise, Shell Pink and Pearl Grey. "VITROLITE" is $\frac{5}{16}$" thick and is supplied in the following ashlar sizes: 10" × 15", 12" × 18", 15" × 15", 14" × 21".

Supplies are available through the usual channels.

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"VITROLITE" is the registered trade mark of Pilkington Brothers Limited.

*except Hydrofluoric

PLANNED—*for royalty*

We are justly proud that "PLAND" stainless steel sinks were chosen for the galley of the yacht "Norge" which was presented to His Majesty The King of Norway by his people. Like all "PLAND" products, the double-type unit illustrated, and the others installed aboard the Norwegian Royal yacht, possess points that ensure hygiene, labour-saving and durability. The sinks were made in association with Messrs. Bassett & Findley Ltd., Boundary Lane, London, S.E.7.

The satin polished surface of a "PLAND" stainless steel sink is completely hygienic—it prevents germs from lodging and presents a gleaming surface free from rust, corrosion and tarnish. Cleaning with soap and hot water leaves the surface sweet and clean. Below is shown a single-type unit with more reasons for the popularity of "PLAND" sinks in hotels, hospitals and homes everywhere.

BIF 1951

APRIL 30—MAY 11
CASTLE BROMWICH
BIRMINGHAM
SEE OUR EXHIBIT
STAND B.504

The surface is indestructible as the material is uniform through and through.

The bowl of the sink, the surround, and the drainer are free from joints or crevices — smooth contours and gleaming surfaces are everywhere.

Stainless steel overflow is one piece—a simple matter to remove and clean it.

Efficient sound deadening cuts out the objectionable noise that washing-up tends to create.

We make many sizes of single and double type units, but are always pleased to hear of your prospective plans and we can carry out special designs to your own specification.

PLAND PRODUCTS

In association with the Taylor Rustless Fittings Co. Ltd., we can supply Architectural Fittings, Door Furniture, Butchers' Fittings, Holloware for Hospitals, Food and Chemical Factories, Chemical Plant—Tanks, Coils and Ducting.

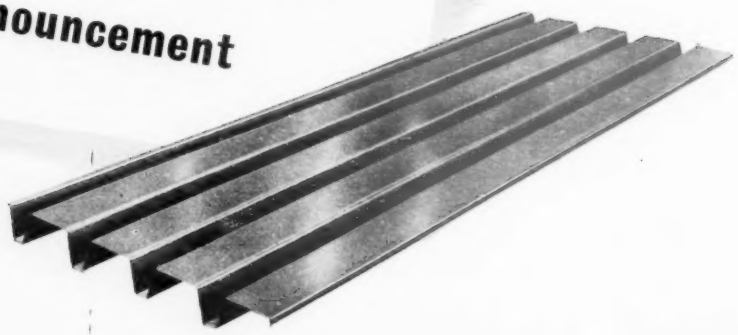
SEVERAL STAINLESS STEEL SINKS AND SINK UNITS HAVE BEEN CHOSEN FOR DISPLAY IN THE SOUTH BANK EXHIBITION

THE STAINLESS STEEL SINK COMPANY LIMITED

RING ROAD, LOWER WORTLEY, LEEDS 12, and at 14 GREAT PETER STREET, WESTMINSTER, S.W.1
TELEPHONE: LEEDS 38711 TELEPHONE: ABBEY 1575

5.33

An important BITUMETAL announcement



SINCE its inception a few years ago, 'BITUMETAL' has rapidly acquired the confidence of Architects and Engineers in many parts of the country.

At no time, however, can it be said that finality has been reached in the presentation of a product or service. Our Roofing Development Department is constantly carrying out research into conditions affecting application and purpose, and recently it was observed that an aluminium sheet of 18 gauge fabricated into such a substantial unit provided in many instances a greater load-bearing capacity than was strictly necessary.

We therefore introduced 20 gauge 'BITUMETAL' Roof Deck eminently suitable for many classes of buildings, and at the same time, economical in the use of aluminium. Deck units of 18 gauge are still being produced for high load-bearing capacities, but generally it will be found that 20 gauge units will meet your requirements and at a considerably reduced price.

Full technical data of this important change is available at any of the undernoted Area Offices.

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STANDARD PRACTICE

A sandfaced brick used to be an expensive hand-made article. After much experiment London Brick Company Limited devised a method by which the sand could be blasted into the brick under heavy air pressure and eventually a process was perfected by which sandfaced bricks of high quality could be economically produced by mechanical means. After exhaustive tests of its weathering properties it rapidly gained general acceptance among architects until now it has become standard practice, when a small grained texture is required, to specify

Phorpres bricks are available in a very wide range of standard specials. Particulars of these may be obtained from the Technical and Research Department, who are at your service for information or advice on brickwork problems.

the PHORPRES sandfaced brick

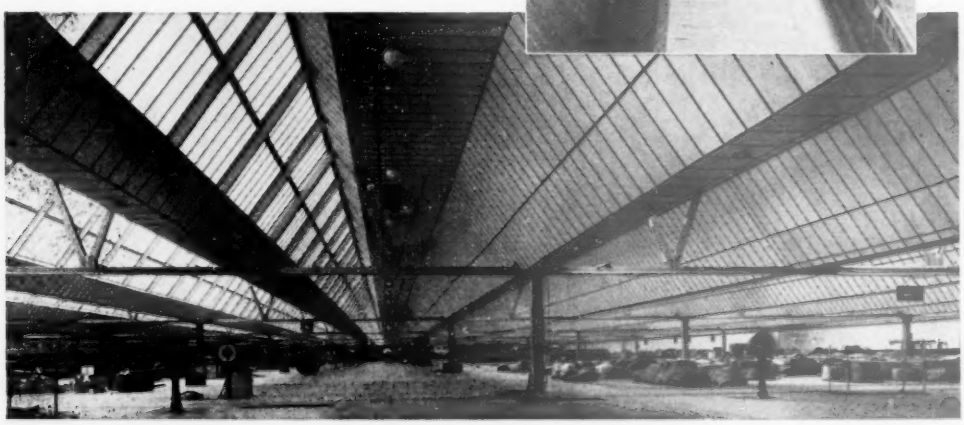
PHORPRES

LONDON BRICK COMPANY LTD *Head Office:* AFRICA HOUSE, KINGSWAY, LONDON, W.C.2 Telephone: Holborn 8282. *Midland District Office:* Prudential Buildings, St. Philip's Place, Birmingham, 3 Telephone: Colmore 4141. *South Western District Office:* 11 Orchard Street, Bristol, 1 Telephone: Bristol 23004/5. *Northern District Office:* Gascoigne Street, Boar Lane, Leeds, 1 Telephone: Leeds 20771

ROOFING BY RUBEROID

Factory for Patons & Baldwins Ltd., Darlington.
Architects: Sir Alexander Gibb & Partners.

The Ruberoid Insulated Steel Roofing provides the complete answer to problems relating to the permanent cladding of framed structures. For this reason it was selected by the Architects for the roof of this vast project. The features of this light weight insulated roofing incorporate unique thermal insulation with an adequate capacity for mastering roof joists spaced at economical centres. The complete specification is supplied and erected by the Ruberoid Co., Ltd.



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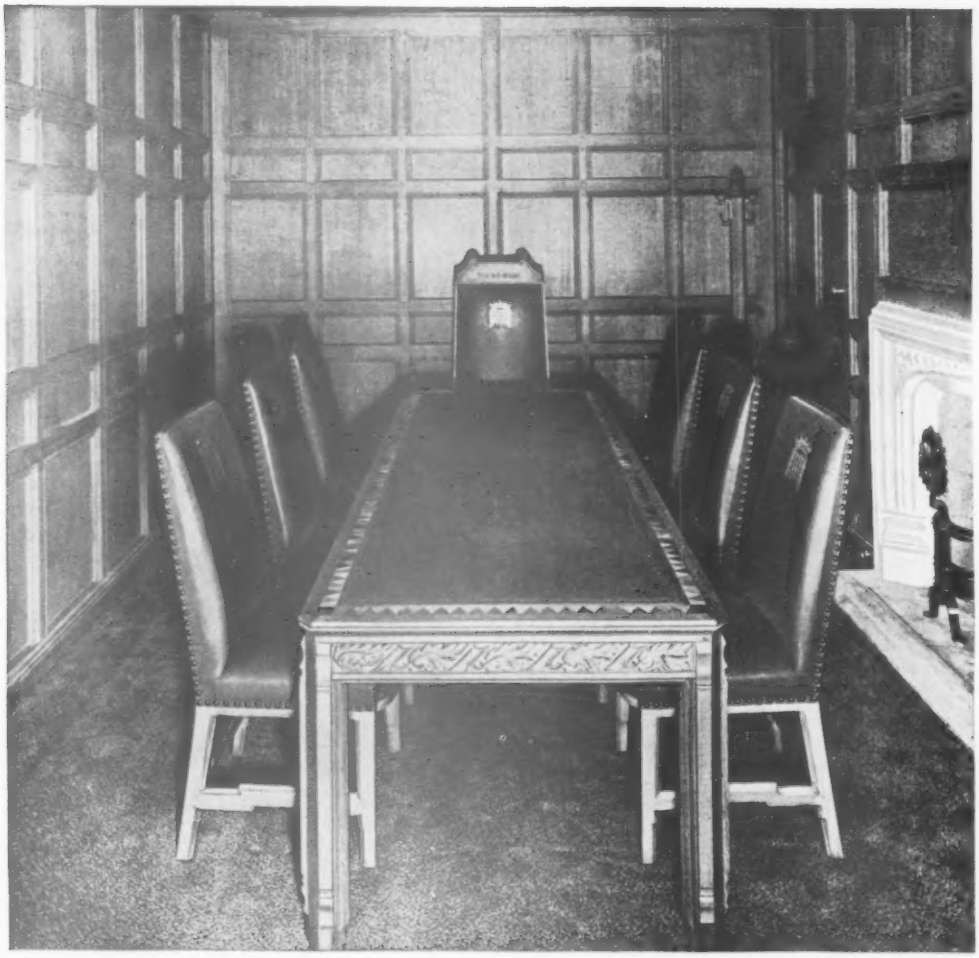

Prime Minister's Conference Room, House of Commons *Architect: Sir Giles Gilbert Scott, O.M., R.A.*

The table is of English Oak and inlaid round the edge are two hundred and fifty nine different woods, assembled by us from contributions by the Commonwealth and Empire.

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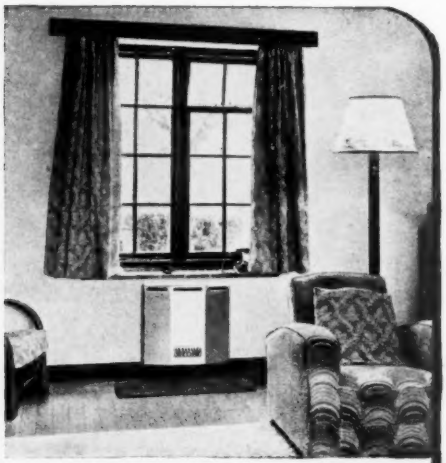
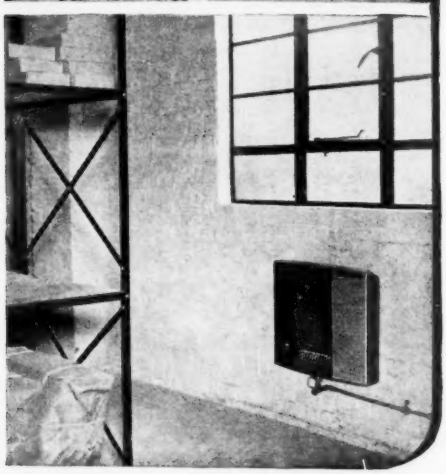
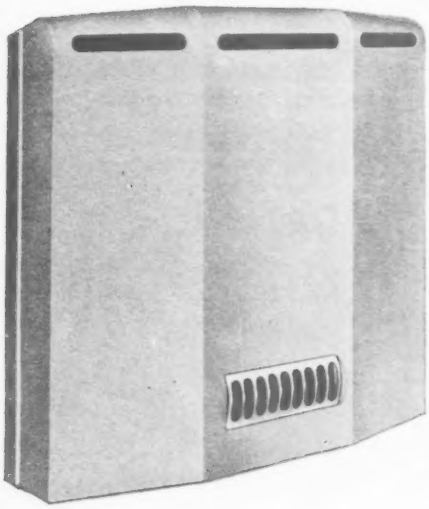




THE

"Sapphire"

BALANCED FLUE SPACE HEATER



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STRAMIT DECKING

STRAMIT—

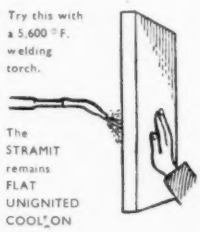
A VERSATILE BUILDING BOARD

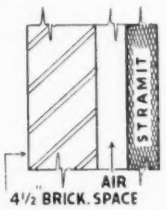
DESCRIPTION STRAMIT is a building slab of compressed straw covered with a stout paper liner. It is of Swedish origin—manufactured at Stowmarket, Suffolk, under licence—as well as in 12 other countries. Tested by Building Research Station, Garston, approved by Ministry of Health, Ministry of Works, and specified by leading Architects and Councils.

DIMENSIONS 2 in. thick, 4 ft. width, 8 ft., 9 ft., and 10 ft. lengths. "Cut-to-size" service is available, saving site work and eliminating waste.

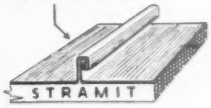
DATA Weight: approximately 3.8 lb sq. ft. Thermal value: 0.60 B.Th.U. per 1 in. per sq. ft. per hr. per 1 deg. F. (B.R.S.). Spread of Flame: Class 2 when distempered or painted; Class 1 when plastered (B.R.S.). Sound absorption: 45-55 %. Sound Insulation: Approximately 30 dB. Strength: The slab is about 3 times as strong in width as in length (modulus of rupture 600 lb sq. in. and 187 lb. sq. in.). For normal partitions framing along the edges (4 ft. spacing) is enough. In a roof decking, with 40 deg. pitch or less, a centre bearer is required: all edges should also be supported.

USES Roof decking under felt, sheet metal, asbestos, etc., (often saves separate ceiling). Lining to external walls (see illustrations below). Lagging of water tanks, etc. Partitions in dwellings (low cost; light-weight dry construction). Removable or fixed office partitions (glazed or unglazed; may be used with standardized extruded aluminium sections and other licence-free items. Illustrated below). School partitions and roofs. Factory screens and divisions. Machine bases (noise reduction, anti-vibration). Acoustical correction in factories, studios, blocks of flats, schools, etc.



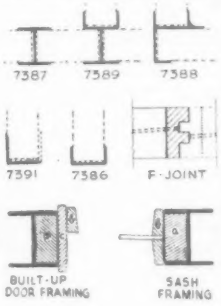


External wall of 4½ in. solid brick with 2 in. STRAMIT fixed on inside to battens or clips, creating an air-space. STRAMIT distempered only. U—0·16



Flat or pitched roof of copper or similar weatherproof covering on 2 in. STRAMIT. U—0·24

STANDARD ACCESSORIES



PRICE The basic price of the 2 in. STRAMIT Slab is 1 - per sq. ft. delivered to site.

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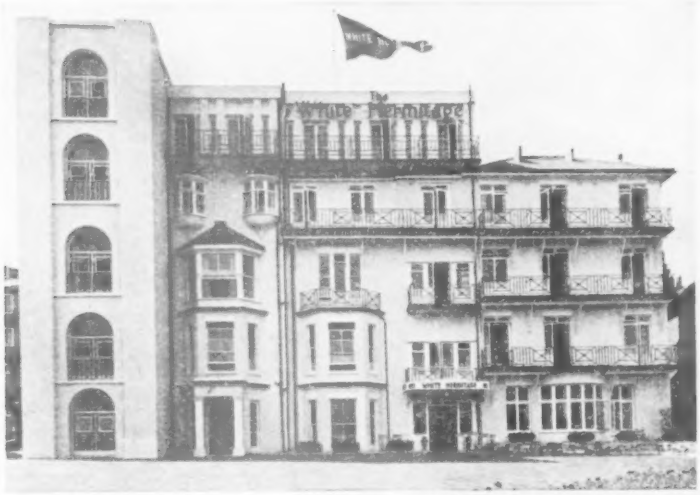
CRC 5

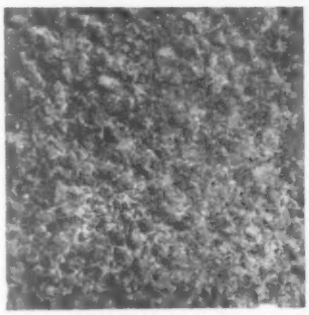
THE SNOWCEM CASE BOOK

WHITE HERMITAGE HOTEL · BOURNEMOUTH



An example of the excellent results obtainable with Snowcem applied by brush to roughcast. Two coats of White Snowcem were used. The choice of Snowcem has ensured not only the brilliant white effect desired but has also given added weather protection.

Contractors for renovation: Claude A. Barnes (Bournemouth) Ltd.



This Close-up photograph shows the surface texture to which Snowcem was applied.

SNOWCEM is easily applied to concrete, cement rendering, stone or suitable brickwork by brush or spray. Seven colours: White, Cream, Deep Cream, Buff, Pink, Silver Grey, Duck-Egg Green. Our Technical Department is always at your service.

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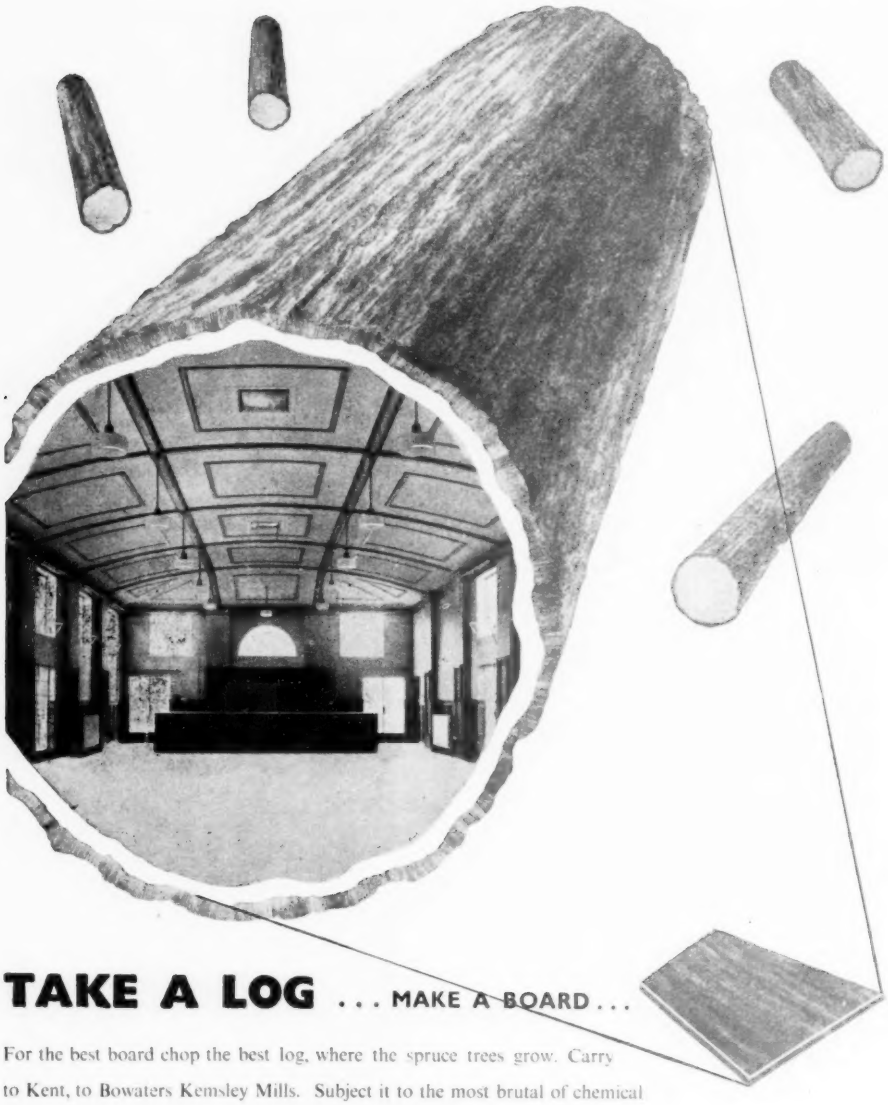

TAKE A LOG ... MAKE A BOARD ...

For the best board chop the best log, where the spruce trees grow. Carry to Kent, to Bowaters Kemsley Mills. Subject it to the most brutal of chemical and physical treatment and reduce to pulp; then synthesise by pressure into sheets. From this simple sounding process are produced **Lloyd Boards**, grainless, knotless; and extra-resistant to the resentful climate of British cities. *Made in Medium, Standard and Super Hard, Building, Insulation and Bituminous grades.*

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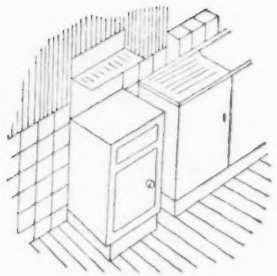
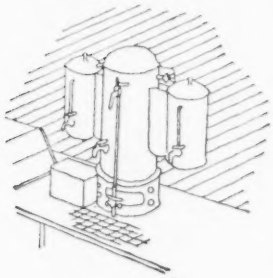
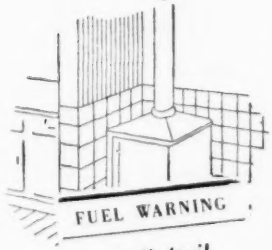






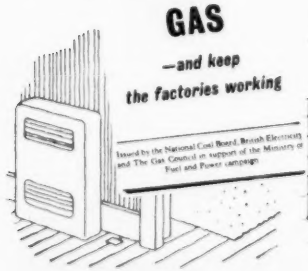
FUEL WARNING

Until April

PLEASE BE **EXTRA CAREFUL** with **COAL ELECTRICITY** and **GAS**

—and keep the factories working

Issued by the National Coal Board, British Electricity and The Gas Council in support of the Ministry of Fuel and Power campaign



Information and advice on GAS equipment

In order that architects, builders and others interested may keep abreast of the latest developments in gas services, a permanent exhibit is maintained at the London Building Centre. Here may be seen examples of the following types of appliances :—

DOMESTIC GAS COOKER

Various well-known cookers are exhibited, all of a high standard of design and performance.

CATERING EQUIPMENT

Included in this part of the exhibit is equipment for snack bar counters, refuse disposal, vegetable boiling, grilling, roasting and steaming.

CENTRAL AND WATER HEATING

Coke and gas-fired boilers are included, as well as hot water circulators, bath heaters, sink heaters, and multipoint heaters.

SPACE HEATERS

Appliances include coke fires with back boilers, gas radiators, panel fires, hearth fires, portable gas heaters, and overhead radiant heaters.

HOME LAUNDRY EQUIPMENT

Under this heading are exhibited appliances for drying and airing towels, clothes drying (both built-in and free-standing), and various types of clothes washing machines.

REFRIGERATORS

Both built-in and free-standing types are included.

A technical assistant is in attendance at the Building Centre to give information and advice. Literature dealing with the application of gas appliances to a great variety of problems may also be obtained from the Area Gas Boards or the Gas Council.

GAS

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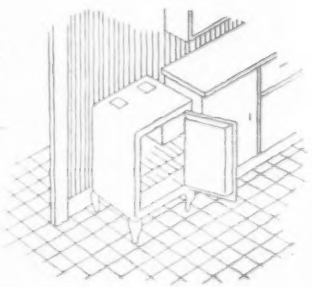

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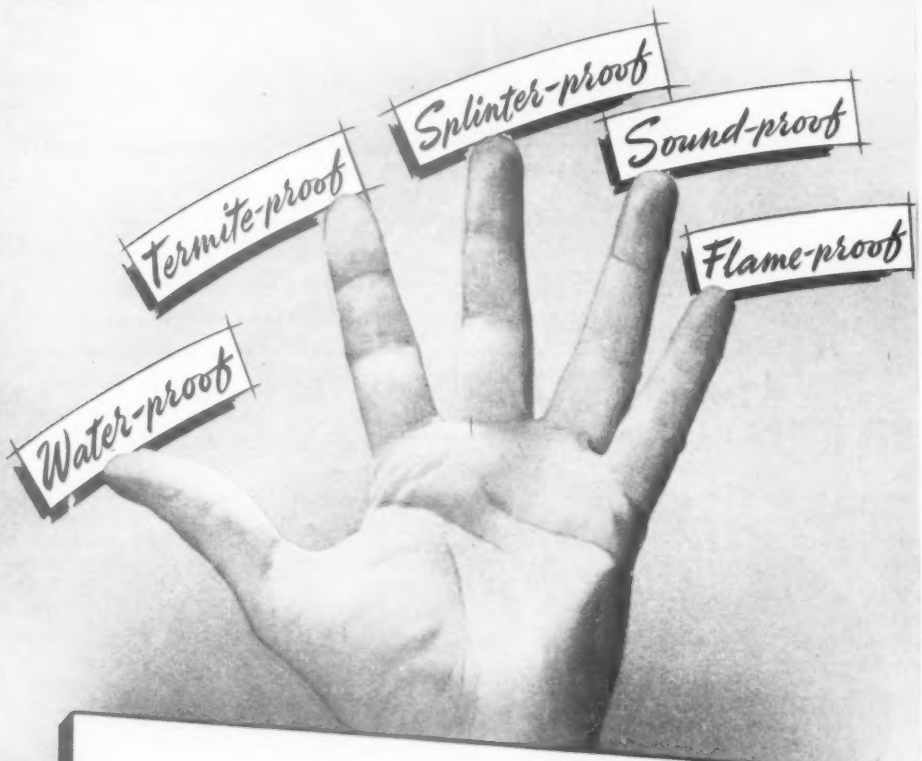

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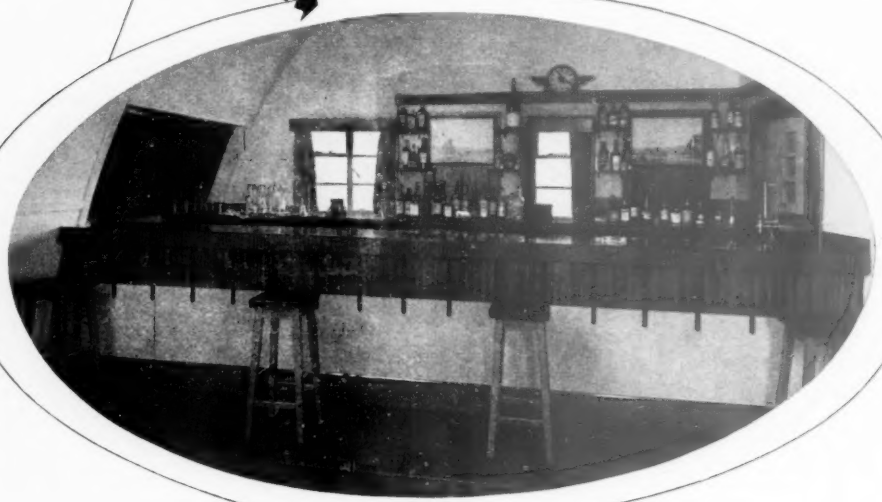
happy landings

AT COVENTRY AEROPLANE CLUB

It is evident from the illustration that much can be done in a Nissen Hut. The attractive bar has a maroon Formica top, with veneered walnut and Birds Eye maple front. The backfitting has a Formica sideboard with back panels to match the bar front enclosing original landscape paintings. The small side servery is enclosed with a walnut veneered panel, pivoting on the upper edge.

THIS IS A NISSEN HUT



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CONSIDER THE MODULE

AS long ago as May, 1947, the Building Divisional Council of the British Standards Institution considered that the widespread interest in modular co-ordination both in this country and overseas warranted the setting up of a committee to investigate the subject. A number of user and manufacturer organisations were invited to nominate representatives and the committee was formed under the Chairmanship of Mr. S. Rowland Pierce.

The committee prepared a first interim report which was presented to the Building Divisional Council on November 26, 1948, and asked for further instructions before continuing its work. The Building Divisional Council considered the report, with the result that the committee was asked to continue its deliberations in a further stage on the lines suggested in the report.

The committee presented a second interim report to the Building Divisional Council on May 9, 1950, as it considered it had reached a further stage and to continue beyond that point would involve a considerable amount of additional work beyond the present resources of the committee.

The Building Divisional Council decided that the two reports of the committee should be combined in a single document to be circulated widely in the building industry in order that comments might be obtained on the findings. These comments would serve as a guide during the continuation of the development of a national scheme of modular co-ordination and, during the period of comment, discussions could be continued as to the best means of making further progress.

Terms of reference given to the committee by the Building Divisional Council were as follows:

1. To act as the United Kingdom Committee to receive, consider and report on any proposals concerning Modular Co-ordination received from the International Organization for Standardization (ISO).

2. To consider if any steps should be taken to develop Modular Co-ordination in the United Kingdom and make such recommendations as may be considered desirable.

The First Report on Modular Co-ordination has now been published, and as it is the wish of the Committee that it should be read and discussed as fully as possible, the text of the report is printed, by permission, in this week's issue. It is hoped that the report will be carefully studied and that readers will write in and give their opinions.

The committee feels it necessary to make clear, for the purpose of this report, that a module has been defined as a unit to be used in the design of buildings and as a basis for the co-ordination of design and construction and of standard building materials and components. The module would form the basis of a 3-dimensional rectilinear grid which, when used for all types of building, would ensure that standard materials and components could be used together and would, in turn, fit into general design layout.

It is desired to stress that modules which are units for basic design should not be confused with the usual units of measurement, such as inches or centimetres, although in practice modules may be expressed by any such normal units of measurement. Further it should be realized that the manufacturers of the materials and components will not normally supply goods to dimensions exactly equivalent to a

The headquarters of the Furniture Development Council is at No. 11 Adelphi Terrace, at one time the address of the Adam Brothers. The Council Chamber, which has a fine Adam ceiling, has now been furnished with natural mahogany furniture designed by Mr. Basil Spence, the gift of the Scottish Furniture Manufacturers' Association to the Council.

module, or to a multiple or a sub-multiple thereof, but to dimensions which, when the goods are installed, will permit a building, as a whole, to conform to a modular layout.

The first reaction to the report may well be "Goodness, haven't we got enough worries without puzzling over modules." Another probable comment is "What is the difference between a module and a dimension, and if you must have a module what's wrong with the good old brick?"

The committee consider small units like bricks and tiles as plastic materials that can be cut on the job and give reasoned arguments for suggesting a larger unit, namely 40 inches.

To some people it may seem curious to adopt a module of not quite a metre, but there again the report points out that until there has been actual physical experiment, it is impossible to lay down theoretically the optimum dimension for the module.

At this stage it is unwise to say anything here that might prejudice the issue, the important thing being for architects and manufacturers to understand and discuss the report so that tolerances of different material can be calculated in terms of the design module if that is possible. But there are two dangers that must be mentioned so that they can be avoided. Designers must not be turned into puzzlers, and buildings must not be festooned with cover-stripping to get over joint trouble. It would be better to jettison modular co-ordination if these should result.

The wording of the report has, we know, been very carefully phrased and is what it says—a first report and not an exhaustive treatise. There is no suggestion that existing factory layout be scrapped overnight. In Ramsay MacDonald's phrase, "evolution, not revolution," is envisaged. Nevertheless, if a full-scale adoption of modular co-ordination is accepted and initiated, it will be revolutionary. For this reason now is the time to bring to bear on this report the greatest imaginative scrutiny.

EVENTS AND COMMENTS

SOUTH BANK PROGRESS

I WALKED round the Festival site on the first sunny day for weeks. Everyone I met was optimistic and good-humoured. Judging by normal exhibitions six weeks before opening day, I should say that this one will, barring accidents, be ready on time. Final colours are going on the buildings and display fixers, presided over by duffle-coated maestros, are working like beavers everywhere.

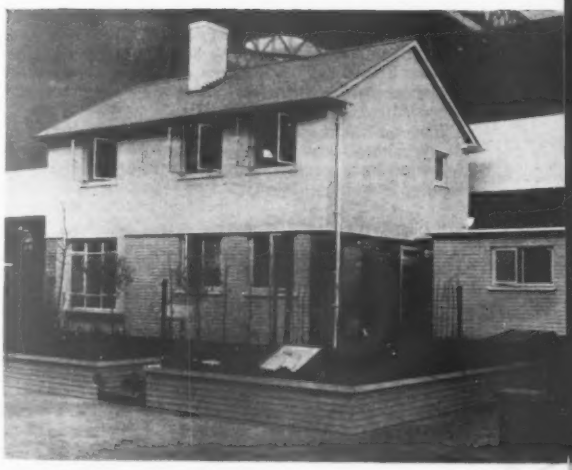
Many of the major exhibits are installed, and others queue up at the entrance for admission. The Dome is being cleaned externally, while inside in the semi-darkness stand-fitters, mural painters and technicians work in what seems, to anyone who has not seen the circulation diagram, no end of a muddle.

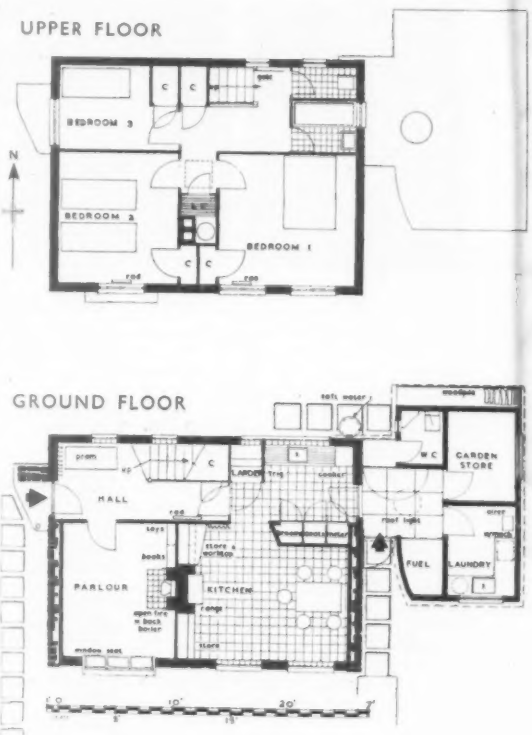
It is now beginning to be possible to visualise the finished exhibition and to appreciate the contrast between the closely sited buildings and exhibits on the L.C.C. side of Charing Cross Bridge and the more open and leisurely planning of the area round the Festival Hall. I think that it will be found that Basil Spence's Ships and Sea exhibit is outstanding, with first prize for elegance to Robert Goodden and Richard Guyatt's Lion and Unicorn (British Tradition Pavilion). My only fear about the latter is that it will not be particularly British. I had hoped to see something of the Skylon erectors, but they were clustered round the highest point of the structure, slowly moving about like monkeys feeding in a peepal tree.

THE IDEAL HOME

IT is easy to be superior about this mammoth housewife's benefit. Hundreds of thousands of people enjoy it and that in these days is something. I think that the standard of presentation improves each year and although there are still plenty of horrors, there is also plenty that is worth more than a passing glance. To begin with they have laid down what must be the longest, widest and most expensive red carpet in history. I calculated that eight hundred yards of velvet pile carpet and underlay had been used. I liked the draped canopies over the main aisle and particularly liked the candelabra festooned with coloured balls. A small section of the Crystal Palace has been reconstructed in a new lightweight alloy at the far end of the main hall and part of it is occupied by a fascinating exhibit of glass and glassware arranged by Chance Brothers, who, you may remember, supplied all the glass for the great exhibition. My intention was to visit the Women's Institute house designed by that organisation with the assistance of Mr. Lionel Brett, but the Institute was there ahead of me and I saw only the outside, which was comely enough. With one major exception I thought the show houses, externally at any rate, were better than usual.

During a quick walk round I saw a rustic rocking chair which would have been far more use sawn up in logs, a vacuum cleaner stand in brown leather and linoleum where a tall girl demonstrator in a very short velvet coat and very long black net tights looked a shade out of place, a working bakery with a heavenly smell, and a Czechoslovak stand as yet unfinished and without



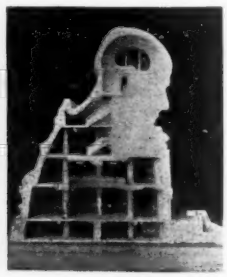


The Women's Institute House at the Ideal Home Exhibition, which incorporates many ideas and requirements of Institute members. It has 1,000 square feet of floor area, and although this particular detached house is for exhibition purposes, in a semi-detached form would be suitable for consideration by local authorities and could be built, we understand, for under £1,500. We hope some local authorities will build this type, which although well above current low-cost standards, has a great deal to commend in it. The architect is the Hon. Lionel Brett, M.A., A.R.I.B.A.

electric light, beseiged by a crowd buying packets of something at greatly reduced price. A tip to designers here; if you really want to draw attention to your exhibit do not light it up. The Gas Council and the British Electrical Development Association again vied with each other. I think B.E.D.A. had it this time, with a girl in a pink fluffy kimono and a man with boiled shirt and dressing gown sitting on adjoining partly collapsed twin beds, having a bored conversation. I hope the girl was wearing a wedding ring.

LORD FESTIVAL AT THE F.O.

NOW that Mr. Herbert Morrison has taken over the Foreign Office the question of the threat to Carlton House Terrace might appropriately be settled by housing the Foreign Office in the South Bank buildings. I see that various exhibits in all sections are being arranged in an attempt to show that the Russians did not in fact invent absolutely everything. This is only as it should be, but surely it is going too far to suggest that the first railway ticket was designed by an Englishman? To prevent an international incident the Foreign Office should move in before May 3.



GANDHI MEMORIAL

DO you remember the foreign gentleman who, overcome with admiration for this country in general and Mr. Churchill in particular, wanted to erect a statue of him eighty feet high on the cliffs of Dover? This was not to be entirely unutilitarian, as the cigar was to be arranged as a beacon to shipping in the Channel. An Indian sculptor has gone more than one better on this idea. Mr. Karmarkar, of Bombay, proposes a memorial to Mahatma Gandhi in the form of a vast bust containing a five-storey building. Apparently the Gandhi Memorial Designs Committee are actually considering this extraordinary scheme and would prefer to use white marble as a casing in place of the red sandstone suggested by the sculptor. The building would have a basement restaurant and three floors of exhibits describing Gandhi's life and work, with an observation room on the top floor where visitors could see New Delhi through "the eyes of the Mahatma." I wonder whether anyone has ever paused to consider what he would have thought of such a monstrous idea?

A PENGUIN ON SWEDISH ARCHITECTURE

PENGUIN Books have produced a pleasant picture book, with explanatory text by Bertil Hultén, called *Building in Sweden*. Most of the illustrations will be familiar to architects, but it is the first book on Swedish architecture which I have seen addressed to the general public. At 3s. 6d. it is worth considering if you cannot afford the standard works.

ROYAL FESTIVAL HALL CONCERTS

MY statement that all the seats for the opening series of concerts had gone before the box office opened is described as completely untrue by the General Manager of the Royal Festival Hall. What happened was that 30,000 people applied for tickets for the Toscanini concerts in the first three posts and, as the Hall only holds 3,500, large numbers were unsuccessful in obtaining tickets. The General Manager states that all applicants were informed as quickly as possible whether they had been successful or not. I am sorry that my information was wrong.

R.I.B.A. TRANSPORT EXHIBITION

MY brief notice on the current R.I.B.A. exhibition produced an invitation from Dr. F. F. Curtis, Architect to the Railway Executive, to meet him and tour the exhibition. I must say that this was a most heartening experience. My paragraph on railway design in last week's issue was already in print when we met. Had I known Dr. Curtis before I should not have been so concerned about the future of railway design in this country, and there is little doubt that if money was no object we should already have seen many examples of railway architecture of a high standard. The changeover from bad or indifferent to good design must, as in the L.C.C. Housing Architect's Department, take time, and the volume of work waiting to be done is vast. The railway executive has proved to be sensitive to public and professional criticism and now appears to be ready to do the right thing. The examples on view at the R.I.B.A. show that they are very much on the right lines at the design stage; what is needed is money to carry out some of the reconstruction work so that the railways may answer public criticism in kind. Apart from the construction of new stations and offices there is a large programme of station refurbishing to be done. The first samples of this will be seen this year when new colour schemes will be tried on stations and buildings. In future stations will not be painted in "railway colours" but in colours suitable to their architecture and environment. A number of different schemes have been worked out for this purpose. A most important factor in the organisation of the Railway Architect's Department is the appointment of bright young men and women in the lower grades. Dr. Curtis is anxious to attract more young people. I noticed that the name of the assistant in charge was mentioned on every one of the British Railways schemes exhibited at the R.I.B.A. This is an encouraging sign. It would take too long to cover the whole of my conversation with Dr. Curtis, but we ranged from knives and forks to carriage decoration, and although these two extremes do not at present come within his province directly, I am in no doubt that with so sensitive an adviser at their elbow the Railway Executive will eventually emerge in their true stature as leaders of architectural and industrial design. You, too, can help the cause by making encouraging remarks when you come across some good railway design; there is plenty on the way.

WOULD YOU LIKE TO WASH YOUR HANDS?

WE like to think that in the fifties we call spades spades. Our grandparents, in an effort to be delicate, called the privy or w.c. the lavatory. Now that the lavatory has come to mean the privy, we are being referred to the bathroom by the more mealy-mouthed advertisers and authors of American child guidance books. In time bathroom will mean w.c., and where shall we go then? Anywhere, I hope, except to the toilet.

THE NORTH THAMES GAS BOARD SHOWS HOW

THE old Gas Light and Coke Co. always set a high standard in design, and was responsible for bringing gas up to date between the wars. Its publicity, from posters to vehicles, was always good, and with its panel of consultant designers and its sponsorship of contemporary architecture at Kensal Rise, it deserved to be considered one of the powers for good in the world of design. Its reputation for being efficient at its job both in gas supply and research was second to none. Nationalisation has somewhat altered the shape of the Gas Light and Coke, which, nevertheless, under its new title of North Thames Gas Board, carries on many of the old traditions.

Last week Sir Edgar Sylvester, Chairman of the Gas Council, and one time head of the Gas Light and Coke, opened a permanent exhibition at Watson House, the Board's utilisation and research centre in Fulham. The exhibition, which was designed by Misha Black in a setting by Brian Peake, is intended both for technical and non-technical visitors, and begins with the story of gas manufacture in pictures and diagrams, passing to methods of installation, appliances, kitchen planning, industrial and commercial uses of gas and coal, ventilation and flues, training, and research and information. The visual effect is excellent and the exhibition is full of useful information for architects or indeed anyone engaged in building. The sections devoted to good installation practice and ventilation are particularly valuable. Architects would appreciate this type of information at the Building Centre. The exhibition has its own lecture theatre and tea bar.

Congratulations to all those responsible. It is a pity that the exhibition should be in Fulham at the end of one of the longest and dreariest roads in London; nevertheless, if you are offered an opportunity of seeing it, I advise you to accept.

My picture shows part of the exhibition seen from the entrance hall, but unfortunately does not do justice to it as a whole.

ABNER

Photo North Thames Gas Board

North Thames Gas Board permanent exhibition at Watson House, Fulham. See above

NEWS OF THE WEEK

A.R.C.U.K. Presentation

To-day, Mr. Sydney Tatchell, C.B.E., F.R.I.B.A., is being presented with a clock by the Architects' Registration Council in recognition of his service in the Chair of the Council from 1935-1951.

The presentation is taking place in the Henry Jarvis Room at the R.I.B.A.

Housing Progress Report

The number of permanent houses completed in Great Britain during January was 13,150, compared with 15,950 in December.

The total number of houses completed under the post-war programme is now 991,814 (834,668, permanent and 157,146 temporary).

Cooper's Tea Rooms

Glasgow Corporation is to maintain the former Cooper's Tea Rooms in Ingram Street as a permanent memorial to the Glasgow architect Charles Rennie Mackintosh. The intention is to adapt the tea rooms—which the Corporation acquired some months ago—for use as a "cultural centre."

Cost will be £10,500. Modernised kitchens will be installed on the ground floor and part of the space will be retained as a restaurant. The basement will be subdivided into a suite of rooms for letting to cultural bodies.

Intention is to retain the Centre as a revenue-producing source and to spend the £10,500 mainly on redecoration and modern equipment.

The building itself will remain substantially unaltered.

Sculpture in the Open Air

Opening by H.R.H. The Duchess of Kent of International Exhibition in Battersea Park.

H.R.H. the Duchess of Kent has graciously accepted the invitation of the London County Council to open the Second International Exhibition of Sculpture in Battersea Park on the afternoon of May 7.

The Second Exhibition will contain forty-four works by leading British and overseas sculptors of the last fifty years, each represented by one work chosen by a committee of sculptors and art experts.

About half the works will come from private collections in Britain, about nine from France and the rest from Austria, Belgium, Canada, Denmark, Germany, Holland, Italy, Switzerland and the United States of America. There will be figures in bronze, from Meunier's *Docker* and Rodin's *Orpheus* to the new *Standing Figure* by Henry Moore; in stone, from Eric Gill's black hoptonwood *Deposition* to Wotruba's *Human Cathedral* in limestone; and also in glazed ceramic, in concrete, in iron and in welded steel.

The Exhibition will be open to the public from May 8 to mid-September from 10 a.m. to dusk daily, including Sundays. Admission will be 1s. and season tickets for the whole period will be available at 5s. Art students, and children under 16 will be admitted at 6d. (season ticket 2s. 6d.) and organised parties of ten or more, by prior arrangement, at 9d. a person.

Inaugural dinner of the Truro branch of the Devon and Cornwall Architectural Society at the Red Lion Hotel, Truro, on March 2. Top table group reads from the left: Mr. A. L. Roberts, F.R.I.B.A. (Hon. Treasurer of R.I.B.A.), Mrs. S. Gregson, Colonel Sir John Carew Pole (Deputy Lord Lieutenant of Cornwall), Mr. Sidney Gregson (Chairman of Truro branch and also the County Architect), Lady Cynthia Carew Pole, Mr. H. J. Hammick, F.R.I.B.A. (President of the Devon and Cornwall Architectural Society), Mrs. Roberts.

C O R R E S P O N D E N C E

Fair-play for the External Student

To the Editor of A. & B.N.

Sir,—At last the disparity between the methods of conducting external examinations and school examinations has been brought into the open. The cause of the external student has been taken up by Mr. Maurice E. Taylor in his excellent article in your Journal of February 23.

I am a school-trained architect and an external student for the T.P.I. examinations and oh what a difference there is between the conduct of the two examinations ! The school is there to help and guide the student beforehand, and after the examination to critically examine the problems and to show where some have failed and why and others have passed. At the T.P.I. external examinations the principal object seems to be to discourage the examinee as much as possible. A brief interview (called an oral examination) is conducted by apparently disinterested examiners who reject some 4-5ths of the candidates with no attempt at criticism of the work produced. The written examination is the same. No marks are given, no criticism attempted, just a brief note that one has passed or failed. At the last written exam. I believe something like 90 per cent. was the percentage of failures. Out of some ten subjects it would be so helpful if an indication was given of the relative markings of each paper.

As there is no anonymity at these examinations I must perforce sign myself, "PER ARDUA."

Low Cost Housing Competition

To the Editor of A. & B.N.

Sir,—Having read and seen the articles and plans, etc., on the *Builder* low cost housing competition recently held and judged, one does seem baffled by what appears to be "much ado about nothing."

I am a surveyor in charge of new housing work for a medium sized London builders and we have been building Council houses for an Urban District Council for the last four years.

The contract at present being worked on is for 18 houses in *pairs* and blocks of four and the cost of these to the Council as negotiated with them, £1,284 each house, and this includes all payment of laying gas to boundary and installation, likewise with water and with electricity and drains.

From the very brief way in which the results are put to the public one would like to ask several questions, as follows:

1. Will the journals publish a priced bill of quantities for the perusal of persons such as I who would like to verify that items can be purchased at prices shown and also that vital costs have been recorded such as laying on of water to the site, laying gas to boundary and carcassing, etc.

2. What depth were inverts to main sewer reckoned ? Was an average taken ?

3. Was any allowance made for inclement weather or was it specially controlled by radar.

It strikes me from weighing up all points of this competition and the fact of actually doing a job of building for the Council that there has been nothing done to lower the cost of building; all that has been done has been to make the design of the houses smaller which could be done on Councils' existing plans.

At present we are handing over to the Council houses at £1,284 each, and they have a floor area of 941 super feet plus an outhouse complete with w.c. Floors of houses are covered with asphalte tiles and the houses are either semi-detached or in blocks of four with access ways through, which, together with the saving by building in terrace plus the cost of outhouses would bring this figure of £1,284 down to the region of your winning design price of £950.

As a matter of figures our price of £1,284 less £130 for the outhouses means we are building for £1,154 an area of 941 super feet which does in fact come down to 24s. 6d. per feet super floor space and there are further deductions which could be made on this, for example, the building in terrace which would save a flank wall.

At conclusion we would welcome any authentic person to view the construction and quality of the work should anyone be so interested.

I am, etc.,
A. H. JARVIS,
Surveyor and Valuer.

IN PARLIAMENT

Historic Architecture in London and the Country

THE House of Lords directed their attention twice last week to subjects of architectural and historic interest. On March 6 Lord Mancroft focused attention on the proposed reconstruction of Carlton House Terrace; and on March 8 Lord Methuen directed it to the wider sphere of the Gowers Report.

Lord Mancroft recalled with evident pleasure the results of the debate on the proposed Colonial Office building in Westminster, but claimed that his purpose on this occasion was merely to seek information: how far were the plans advanced? What were the Government's intentions? How much money was being spent? When would building begin and be completed? He acknowledged that the present Government were not the only repositories of vandalism, for others had been equally to blame. In considering the building itself he saw no reason to idealize John Nash. He was an inspired jerrybuilder, but his building had withstood the ravages of 130 years, two major wars, and several Government Departments. His work had been described by experts as slapdash and coarse; it was said to be sloppily executed, the central pediments redundant, and the roof a mess. It was said that the Terrace might not have been designed by John Nash, and that if it was it had been much improved by Victorian and Edwardian architects. After the publication of this new scheme for the Foreign Office building there, however, there should no longer be room for doubt: they had only to open the grave of Nash, and if he had turned—he did (laughter). Apart from all that, the Terrace as it now stood provided the finest piece of monumental civic design in London, if not the whole of England, and formed a splendid background to its only effective processional way. The architect, Mr. Louis de Soissons, had produced plans of taste, but had tried to tackle a problem that should never have been set. The whole composition was going to be wrecked by the additional 14 feet of building, and they would be presented with a bland, expressionless Government building, lifted up by the three storeys on the top, like the face of a pretty woman that had been lifted. If town planning meant anything, these proposals were a travesty of good planning. No speculative builder could get away with it. The scheme was unnecessary, discreditable, impracticable and unpopular.

The subsequent speakers, led by Lord Silkin and the Marquess of Salisbury from opposite sides of the House, admitted the strength of the case for a new Foreign Office, capable of containing within its walls the multifarious activities of modern diplomatic interests; and that the Terrace had outlived its time and could not continue in its original use. But whereas **Lord Silkin** regarded the new plan as an acceptable compromise and a creditable attempt to preserve this ceremonial way, **Lord Salisbury** questioned the wisdom of embarking on such expenditure in present circumstances and spoke feelingly of the Terrace as part of the fabric of London life. He was unconvinced by the articles and letters that had been written by the architects who supported the Government in the proposal. They were so Olympian as to be somewhat irritating. In any case their own arguments seemed to contradict each other; one moment they said Nash was a rotten architect, and the next that the new plan incorporated nearly all the old work. Nash was probably a far better architect from the scenic point of view than anyone alive to-day.

Several other peers offered their comments. **Lord Badeley** said there was spreading through London a utilitarian architectural idea with little taste and little veneration for the past. **Lord Harlech** suggested that the Nash building should either be kept as a national monument and made into a museum, or pulled down and replaced by Government offices designed for the purpose. The Government found a defender in **Viscount Esher**, who said they could easily have pulled down the whole Terrace, and it was not encouraging that they should get no credit when they tried to do the right thing. If the critics had no confidence in the decision of the Royal Fine Art Commission—who had accepted this design—they should agitate for persons to be opted to it in whom they had confidence. It was wrong to ask the Government to butt in at this late stage and alter the plans.

Lord Morrison, Parliamentary Secretary to the Ministry of Works, summed up the debate in three questions—is a new Foreign Office necessary? if so, should it be in Carlton House Terrace? and if that is so, will the reconstructed building detrimentally affect the exterior beauty of the Terrace as seen from the Mall? The first he justified without dissent, observing in passing that a building internally designed in the style of 1868 could never be made really suitable for the Foreign Office of 1951, when the work was approximately 19 times as great—and even 2½ times as great as in 1938.

On the second he pointed out that if the new Foreign Office was to be placed within reasonable distance of Downing Street and the Houses of Parliament, the only site available was Carlton House Terrace. The problem was a double one: not only rehousing the Foreign Office, but of what was to be done with Carlton House Terrace. The Terrace was in danger of becoming a net loss to the taxpayer even before the war. At one time or another the Commissioners of Crown Lands had considered all possible uses for these buildings. As private residences they were out of date, and the possibility of finding enough clubs or embassies to occupy them all was remote. There were practical obstacles to converting into flats, and any conversion into them hotels which was economic would involve as radical reconstruction as that involved in conversion into offices. The Government's proposals solved the double problem. A report of the Royal Fine Art Commission in 1945 recognised that partial reconstruction of the Terrace would be necessary for any modern use, but suggested the retention of the Mall elevation. It appeared possible within the terms of this recommendation to evolve a scheme which, while retaining the essential character of Nash's work, allowed a proper use to be made of the site.

The Ministry of Works consulted the President of the R.I.B.A., and on his advice appointed Mr. Louis de Soissons, A.R.A., a recognised authority on Georgian architecture and a member of the Royal Fine Art Commission. He was asked to replan Carlton House Terrace on the basis suggested by the Commission, and the result was the scheme now under discussion, which had been approved in general without qualification by the Commission. There would always be those who regarded any form of modernisation or addition to fine old buildings as anathema. But the centre of London could not be converted into a sort of museum, containing buildings which once might have had their uses but were now almost entirely ornamental. He had examined the state of dilapidation into which many of these houses had already fallen; and suggested that the true friends of fine architecture were surely those who, by combining a modern use with the least possible change, arrested the progress of decay which must ultimately lead to demolition.

The appearance of Carlton House Terrace from the Mall would be unchanged. From further back the upper storey on the Carlton Gardens side would be visible, and would take the place of the present untidy skyline with its jumble of chimney pots and attic windows. It would rise only 14 feet above the existing roof in the centre of the Terrace, and was set back 78 feet from the front. The end pavilions would remain as at present. The Athenaeum and other clubs had expressed concern at the proposal that vehicular access to the basement of the new building down a ramp from Waterloo Place. This was a tentative proposal, and alternative methods of access were being examined. The proposal to widen the roadway in Carlton Gardens was also not entirely firm.

The Government's proposals preserved the best of Nash while making fully economic use of the site. Preliminary sketch plans had been prepared, and approved by the Royal Fine Art Commission. Some expenditure on securing vacant possession had been incurred, and consultations with the planning authorities were proceeding. It had been intended to begin the reconstruction in 1952, but owing to the necessity to restrict capital investment it was unlikely that the work could be started until 1954. The cost of building operations would be between £3,000,000 and £4,000,000, spread over several years.

Historic Houses

The debate on March 8 was more diverse. **Lord Methuen** began by describing the Gowers Report on houses of outstanding historic or architectural interest as itself an historic document—and an inescapable warning. These monuments were part of our historic patrimony, but many of them stood hardly any chance of surviving unless they could be maintained free, at least to some extent, of taxation burdens.

The Marquess of Salisbury, himself the owner of a house scheduled as a national monument, put the issue bluntly: did the Government want the houses preserved, or not? If they did not, the decision would be easy but sad; the houses would fall down, or be pulled down, and the contents dissipated. If they did, if they shared the view that these places were a national asset worth preserving, they must do something about it; the Gowers Report clearly showed that the burden on owners was becoming unbearable. Any assistance that might be given by the community, he emphasised, should be limited to the upkeep of the house, and in return, the owner ought to be required to open his house to the public. He urged the Government to give serious and early consideration to the Gowers Report.

The Earl of Wemyss, chairman of the National Trust of Scotland, said the Trust hoped the committee's recommendations would be adopted. He suggested the extension of maintanance claims, suspension for a year of owner's rates while the Government made up their minds, and protection from requisition by the Service departments. **Lord Silkin** doubted the possibility of a policy of subsidisation being accepted, and preferred that the houses should be acquired by the State and maintained in their present form, even as museums. **Lord Chorley**, among others, emphasised the urgency of the problem. Many of the structures needed to be kept waterproof until a decision was taken.

The Government spokesman, **Lord Pakenham**, Minister of Civil Aviation, declared frankly that big decisions of a positive character would involve finance, and on all the financial aspects his lips were effectively sealed. He could not be expected to announce any change in the tax structure or other financial arrangements. He did, however, dispel any impression that the Gowers Report was a special interest of Sir Stafford Cripps and that the present Chancellor of the Exchequer was not quite as keen as his predecessor. Mr. Gaitskell was in no way less interested than Sir Stafford, and there was therefore no question of the Report being shelved through the change of office. The Government's consideration of the Report was steadily proceeding, and what might be regarded as delay was not due to lack of interest.

Answering some questions that had been asked during the discussion, he said that the number of houses that had been demolished since 1945 was 19, and four were threatened. At the time of the Gowers Report only about 700 local authority areas had been surveyed; at the end of February this year 831 had been surveyed, out of a total of 1,477 areas in England and Wales. Twelve thousand houses had now appeared in the statutory lists, and 60,000 had been noted for listing. It was reckoned that, in round figures, 100,000 houses were originally involved. The reason why none of these lists had so far been published was purely a question of priority, but it was hoped that a start could be made soon.

Steps to a New Factory

Major Guy Lloyd asked the President of the Board of Trade if he would enumerate the number of departments concerned with, and the sequence of investigation held into, an application by any concern wanting to build a new factory to meet orders for defence equipment. **Mr. Stokes**, Minister of Works, to whom the question was transferred, gave the following reply: The Board of Trade is responsible for approving the location; my Department is responsible for issuing the building licence on the advice of the Department sponsoring the case. The Central Land Board is responsible for determining the development charge. Applications to the Board of Trade and to the sponsoring Department can be, and generally are, considered simultaneously. As soon as the approval of the Board of Trade has been obtained application can be made to the Local Planning Authority for planning consent and to the Central Land Board to determine the development charge. (Mar. 6).

Reducing Civil Building

Mr. Marples asked the Minister of Works for a statement giving detailed information of the demands which would be made on the building industry as a result of rearmament. **Mr. Stokes** explained that he could not at this stage add anything to the statements made by the Chancellor of the Exchequer in his speech in the House on February 15. He then pointed out that about £500,000,000 of the three-year defence programme would be spent on building work, of which the amount to be spent in the first year might come to something of the order of £120,000,000. He added that it would be necessary to reduce some of the civilian claims in the investment programme, and measures to this end were now under active consideration. (March 6.)

Hardwood Price Index

Mr. John E. Haire asked the President of the Board of Trade if he would state the average increase in the price of home-grown and imported hardwood since bulk purchase by Timber Control ceased a year ago. **Mr. Harold Wilson** replied that he had not enough information about the prices currently being paid by private traders for the many species and grades of home-grown and imported hardwoods to give the figure asked for. The Department was at present trying to revise the hardwood element of the Wholesale Price Index, in consultation with the hardwood trade, to provide weightings which accorded more closely with the present pattern of consumption and to get price quotations. Until this revision was completed satisfactorily, the Index would not reflect changes in hardwood prices as accurately as we could wish. (Mar. 8.)

Ninety Architects

Mr. Marples inquired of the Minister of Local Government and Planning how many architects the Department employed on housing; how many of them were engaged on producing detailed plans for a three-bedroom house costing less than £1,000; and if the plans would be published. He was told by **Mr. Dalton** that there were eight architects at headquarters and 82 in the regions. Part of their duty was to make a continuous study of possible improvements in design and reductions in cost. Plans had been published from time to time, and would continue to be. (Mar. 6.)

Smaller House Suggestions

Mr. C. I. Orr-Ewing made two suggestions in questions to the Minister of Local Government and Planning—(1) that he should permit greater flexibility in housing allocations to local authorities, so that they might build four of *The Builder* economy design in place of three of the current type; and (2) that he should allocate an overall sum to local authorities in place of individual licences, so as to encourage them to get the best value for money and enable them to build more houses for old and single people. On the first, **Mr. Dalton** said that the existing system of allocation was sufficiently flexible for the inclusion of a larger number of smaller houses in the approved programmes of local authorities; and on the second, that he thought the present system better, but he was encouraging local authorities to increase still further the proportion of houses for old people and newly-married couples. (Mar. 6.)

(From Our Parliamentary Correspondent)

APPOINTMENT

Sir Royden Dash, D.F.C., F.S.I., F.A.I., formerly Chief Valuer to the Board of Inland Revenue, has been appointed Vice-Chairman of Bracknell Development Corporation by Mr. Hugh Dalton, Minister of Local Government and Planning.

Sir Royden Dash succeeds Mr. H. W. Wells, recently appointed Chairman of Hemel Hempstead Development Corporation.

COMING EVENTS

Housing Centre

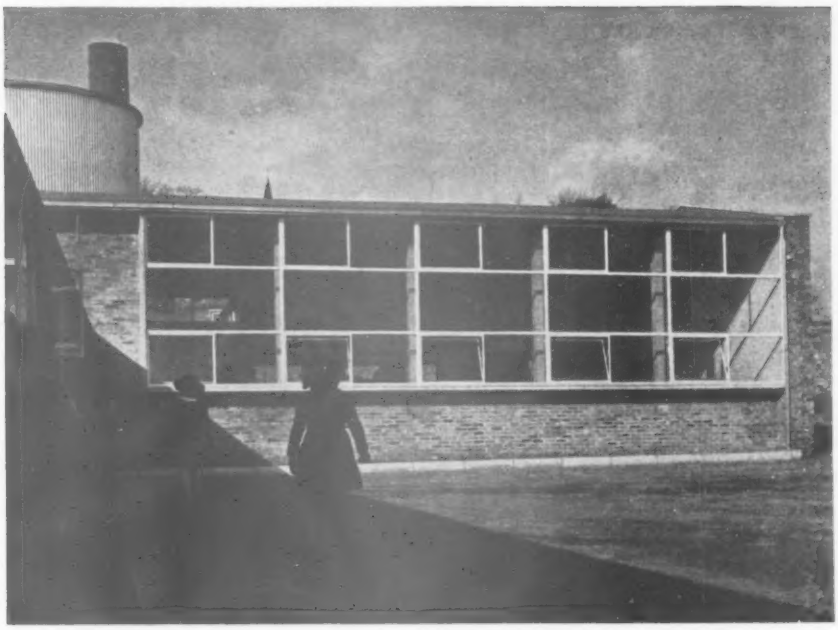
● March 20, at 5.30 p.m. "Survey and Development Plan for the Greenwich Centre."

Reinforced Concrete Association

● March 21, at 6 p.m., at 11 Upper Belgrave Street, S.W.1. "Some Recent Developments in Prestressed Concrete." Speaker: D. H. New.

EXHIBITION

"Rebuilding of Warsaw" at the Royal Water-colour Society, Conduit Street, W.1., on March 20.



External view of Dining Hall

ERITH LESSNESS HEATH PRIMARY SCHOOL

for the Kent Education Committee

architect: ELIE MAYORCAS, F.R.I.B.A.
in collaboration with: S. H. LOWETH, F.R.I.B.A., County Architect
consulting engineer: Felix Samuely B.Sc., A.M.I.C.E.

THE site for this new Primary School is an old apple orchard with the ground contours in the form of a half-saucer falling towards south.

Most of the site was enclosed by a 15 ft. wall in pleasant brickwork, and these old bricks have been reused in the new school as a measure of economy.

The accommodation required by the clients was for 120 infants and 200 juniors. The main entrance hall had to permit future access by infants from the road on the west side when additional land was acquired, and the Assembly Hall had to be square. Some portion of the school had to be in prefabricated aluminium units, which have been used for classrooms only.

PLANNING

The plan, page 311, has been kept as free as possible in order to minimise the amount of sitework "cut and fill" and to make a distinct division between classrooms and "noise" areas. By detaching the aluminium construction from more traditional building work the number of complicated junctions has been kept as low as possible. The four departments, Dining and Assembly Hall Unit; Administration; Infants' Wing; and Junior Wing fall naturally into place with the Junior classrooms facing south-south-east and Infants' classrooms south-east following ground contours. The Dining and Assembly Hall Blocks are placed near the entry to the site to shorten road work for vehicles.

SITE PLAN

View from South showing General Purpose Room on the left and Staff Rooms and Medical Inspection on the right

CONSTRUCTION

The framework for the non-aluminium buildings consists of precast concrete units bolted together to form a frame on an 8 ft. grid. Short spans over corridors, etc., are flats covered by special precast reinforced concrete rectangular trough units 1 in. thick which form the permanent shuttering for 2 in. in situ R.C. topping taking the bituminous roof finish. Larger spans such as in the Dining Hall, Administration and corridor, Cloakrooms, etc., are pitched and covered with 8 ft. by 2 ft. wood-wool slabs supported by small "T" members across the precast in situ reinforced concrete. External walls are 11 in. cavity brickwork and metal bonding strips let into the precast frame tie the inner skin to the concrete units.

SERVICES

Space heating is by means of low pressure hot water hospital type radiators, supported clear of the floor on wall brackets, and supplied by two central boilers. A third independent boiler supplies domestic hot water.

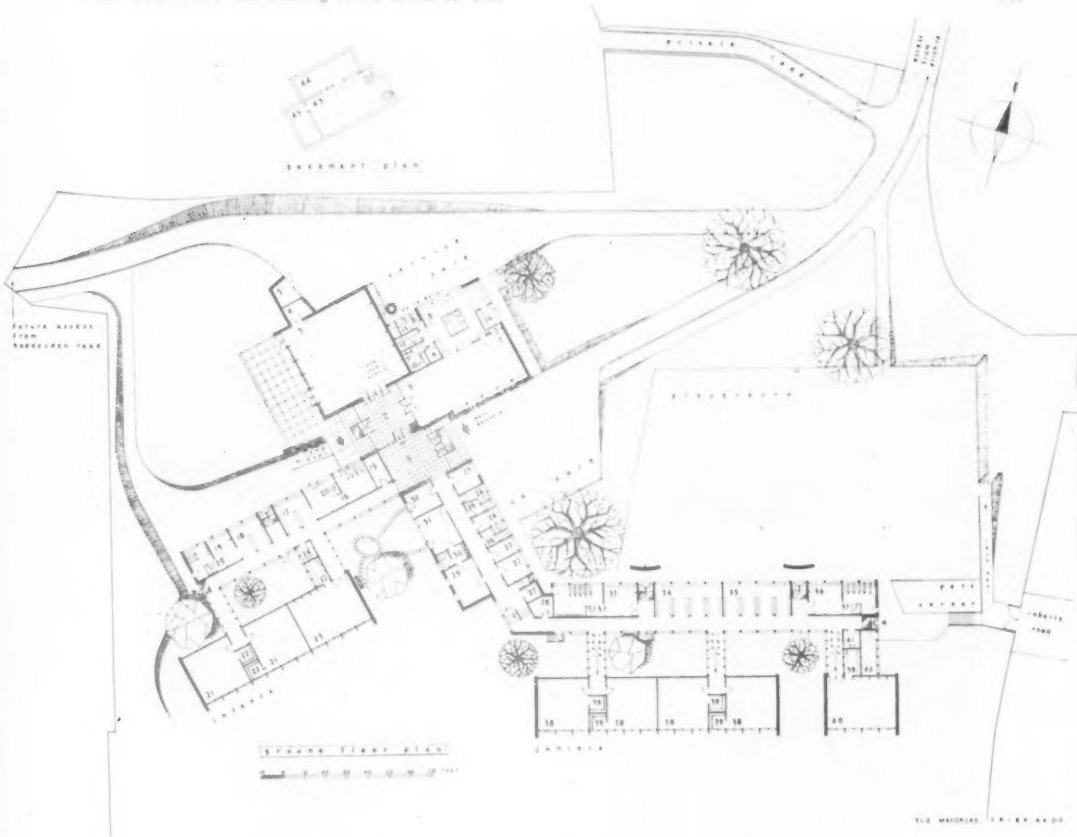
FINISHES

Except in the aluminium units, the majority of internal walls are finished in plaster or cement glaze. In general, floors to all corridors and sanitary blocks have been finished in non-slip "grano," sub-divided into 8 ft. squares by ebonite strips in order to minimise cracks. With the exception of the Assembly Hall, Kitchen and Entrance Hall, all other floor areas have been finished with coloured asphalt. Both asphalt and grano floors have coved skirtings, finishing flush with the plaster face of the wall. Ceilings throughout are distempered directly on to the wood wool slabs.

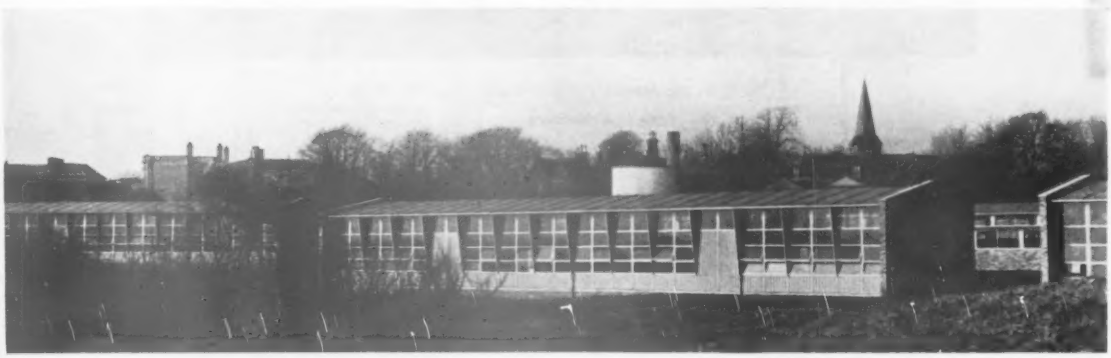
Colour has been used boldly in areas where constant movement takes place and where the children do not stay long. A more domestic and quieter use of colour has been adopted in the teaching areas, in order not to distract attention. The staff rooms in the Administration Wing have been given a domestic character with the use of bright patterned wallpapers in the Principal's and Secretary's Rooms, etc., Colour has also been used to give a visual indication to the children as to the usage of the various areas, e.g., the doors and walls to boys' exits are bright red, and those to the girls' bright yellow. Rear end walls of the various classrooms have been painted a different colour, so that each child can recognise quickly his or her classroom.

GENERAL CONTRACTORS: GILBERT ASH LTD.

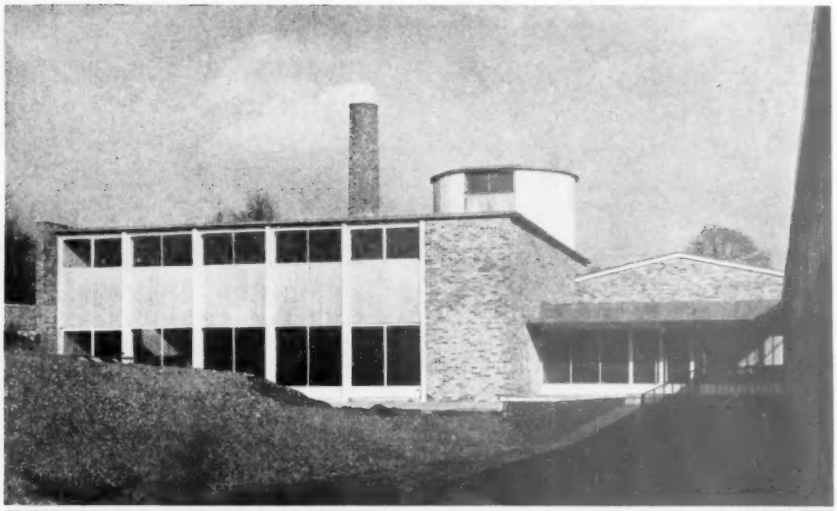
Balustrades—Wrot Iron: Fredk. Braby & Co. Ltd.
Built-up Roofing: William Briggs Ltd.
Cement Cold Wall Glazing: Quickset Water Sealers Ltd.
Cloakroom Fittings: A. J. Binns Ltd.
Doors: R. E. Pearse & Co. Ltd. (Steel); Veneercraft Ltd. (Flush).
Electrical Installation: Troughton & Young Ltd.
Fencing and Gates: Peerless Fence & Products Ltd.
Flooring: Horsley Smith & Co. Ltd. (Woodblock); H. V. Smith & Co. Ltd. (Coloured Asphalt).
Heating and Hot Water Installation: Engineering Service Installations Ltd.
Ironmongery: Lockerbie & Wilkinson Ltd.
Joinery: Construction Units Ltd.
Paints: Mander Bros. Ltd.
Partitions—Precast Terrazzo: Arcanum Ltd.
Precast R.C. Units: Liverpool Artificial Stone Co. Ltd.
Prefabricated Aluminium Classroom. Bristol Aeroplane Co. (Housing) Ltd.
Sanitary Fittings: Stilson's Sanitary Fittings Ltd.
Shutters—Roller: G. Brady & Co. Ltd.
Tiling—Wall and Floor: Cope & Co. Ltd.
Waterproofing to Boiler House: William Briggs Ltd.
Welded Assembly Hall Trusses: Johnson Bros. (Steel Erectors) Ltd.
Windows—Steel: R. E. Pearse & Co. Ltd.

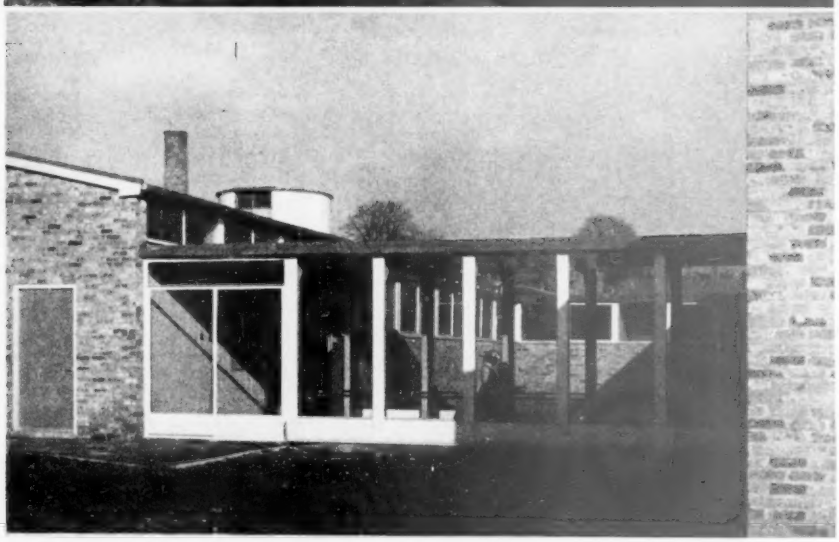


KEY:
1. Entrance Hall. 2. Crush Hall. 3. Assembly Hall. 4. Chair Store. 5. Groundsman's Store. 6. Dining Hall. 7. Meters. 8. Kitchen. 9. Office. 10. Dry Store. 11. Pipe Duct. 12. Larder. 13. Staff Lavatory. 14. Vegetable Store. 15. Store. 16. Girls' Lavatory. 17. Girls' Cloakroom. 18. Boys' Cloakroom. 19. Boys' Lavatory. 20. Airing Cupboard. 21. Classroom. 22. Classroom Store. 23. General Purpose Room. 24. Cleaners' Store. 25. Secretary. 26. Staff Lavatory. 27. Store. 28. Caretaker. 29. Medical Inspection. 30. Medical Waiting and Lavatory. 31. Staff Room. 32. Headmaster. 33. Boys' Lavatory. 34. Boys' Cloakroom. 35. Girls' Cloakroom. 36. Girls' Lavatory. 37. Airing Cupboard. 38. Classroom. 39. Classroom Store. 40. General Purpose Room. 41. Cleaners' Store. 42. Garden and Games Store. 43. Boiler House. 44. Fuel. 45. Pumps.



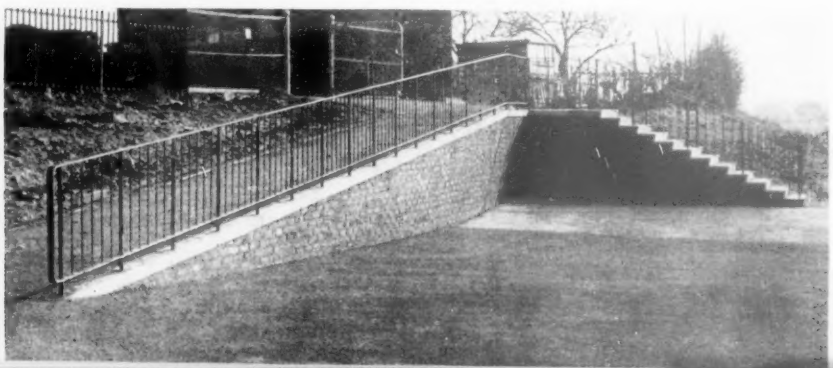
Classrooms are standard aluminium units, but alternate fins to windows have been omitted—to the improvement of the general appearance.

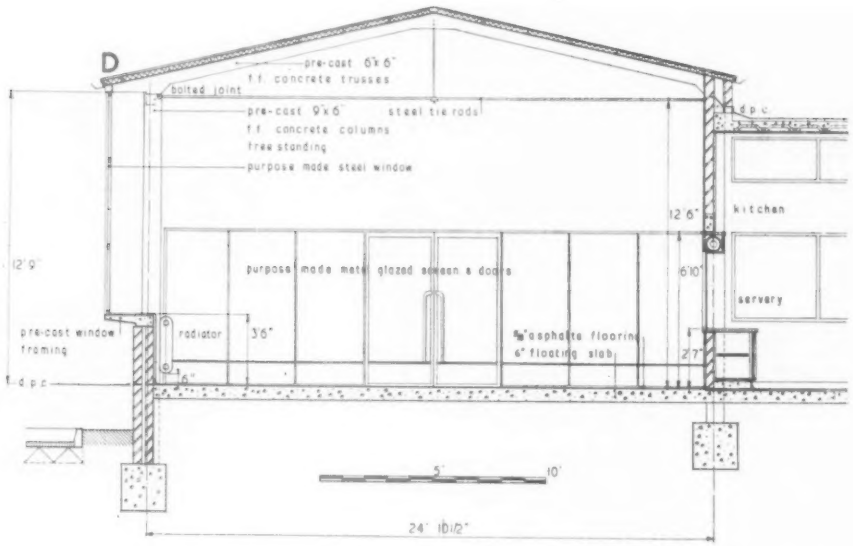


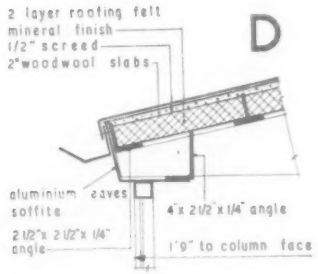


Top View, the Assembly Hall and entrance from West.
Below, one of the link corridors.

Cantelevered steps at Pets Corner.

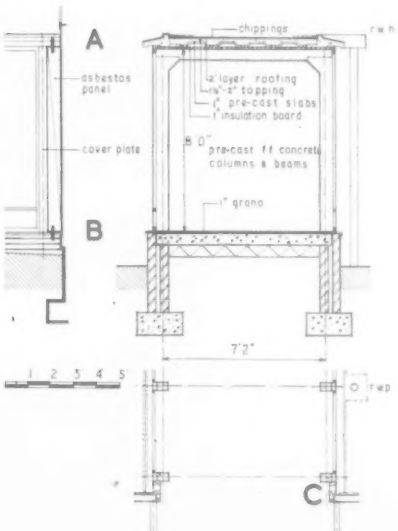


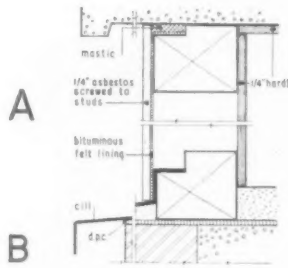


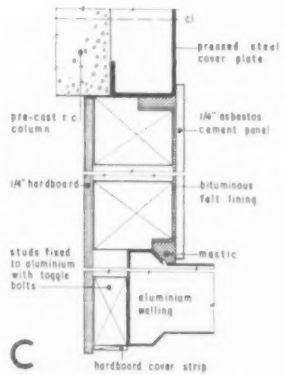


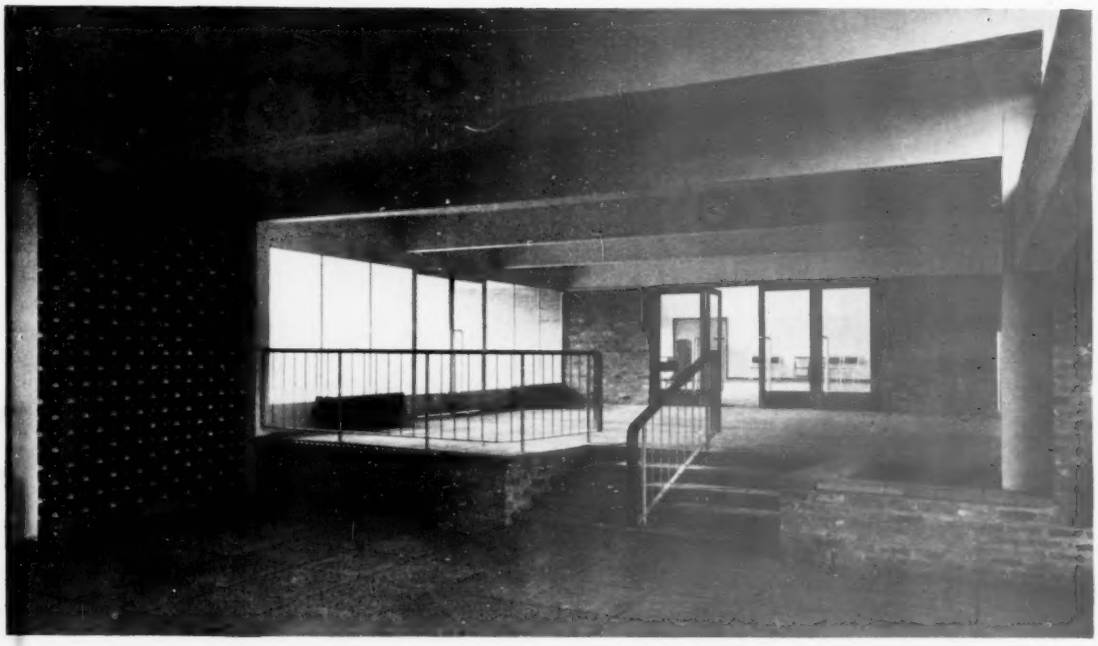
ERITH LESSNESS HEATH PRIMARY SCHOOL

Sections through Dining Hall and Link Corridors

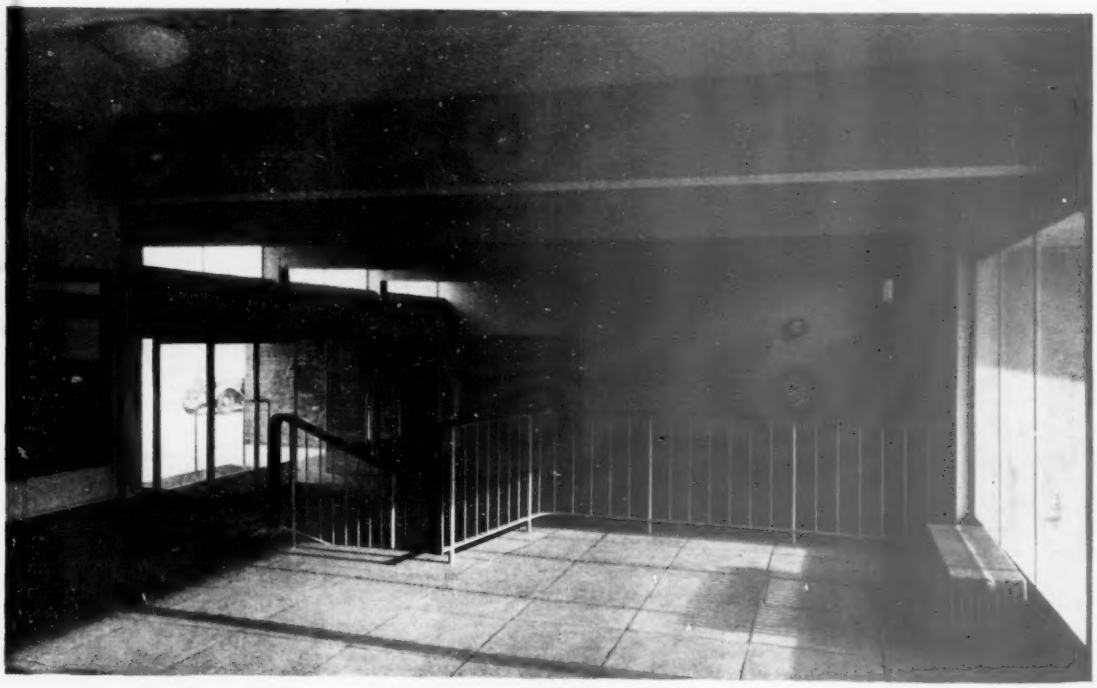






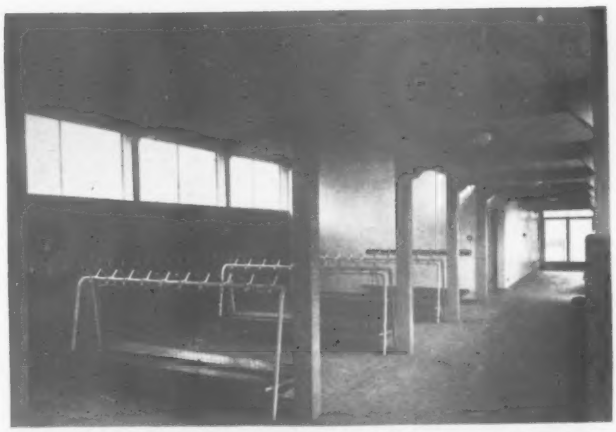


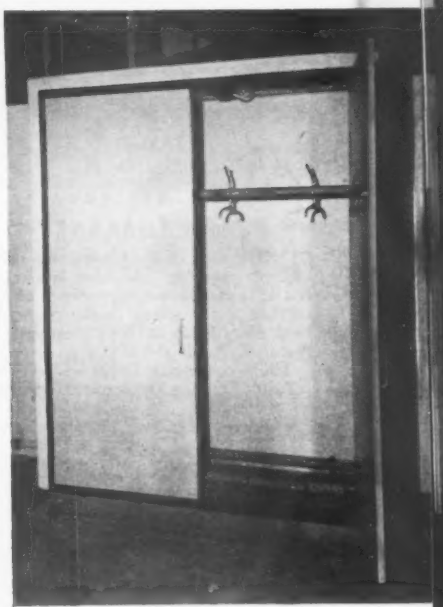
The top picture shows the Entrance Hall in the foreground, with papered walls on the left. Beyond is the Crush Hall and doors to the Assembly Hall. In the view below the positions are reversed, the doors on the left being the main entrance.



Top: the Dining Hall. Middle : the Girls' Cloakroom. Bottom : the Administration corridor looking towards the Entrance Hall.

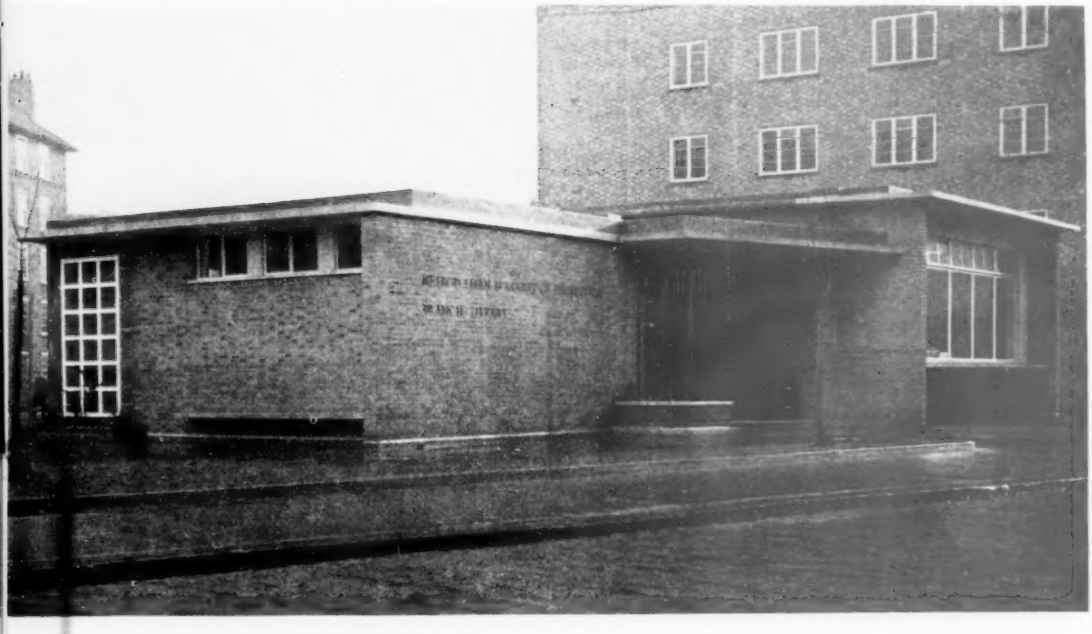
architects:
ELIE MAYORCAS
F.R.I.B.A.
in collaboration with
S. H. LOWETH
F.S.A., F.R.I.B.A.
Kent County Architect





Drying cupboard to Girls' Lavatory. The cupboard projects forward slightly on its base so that air holes can be placed in the bottom and out of sight.

ERITH LESSNESS
PRIMARY SCHOOL



GOLDSMITH'S ROW BRANCH LIBRARY, SHOREDITCH

designed by the Borough Engineer and Surveyor

J. L. SHARRATT, A.M.Inst.C.E., A.M.I.Mun.E., A.R.I.C.S., A.M.T.P.I.

THE design of the library was primarily a problem of planning and the layout dictated by site restrictions due to the existence of a five-storey block of flats at the south of the triangular site, and new road improvement lines required by the Planning Authority.

The accommodation provided is as follows:

Adult Lending Department with shelving for 5,000 volumes.

Children's Lending Department with shelving for 2,000.

Issue and return counter to control both Departments.

Staff and work room, with reserve shelving for 1,500 volumes.

Cloak rooms.

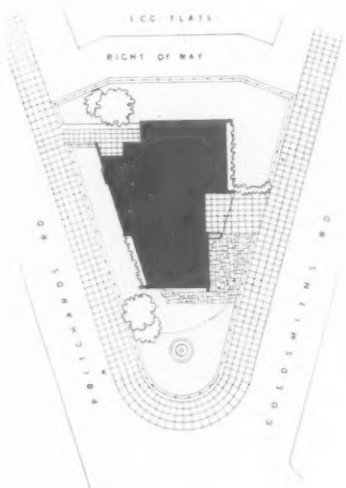
Construction

Walls are 11 in. brick cavity, faced externally with golden brown handmade facings. Reinforced concrete roofs with a false ceiling to the adult library.

Windows are purpose made metal casements and internal doors are flush ply faced.

Finishes

The flooring to the vestibule and library is carried out in grey rubber tiles with black marbled border and the staff room and cloak rooms are finished in pitch mastic. The walls and ceilings are distempered broken white.



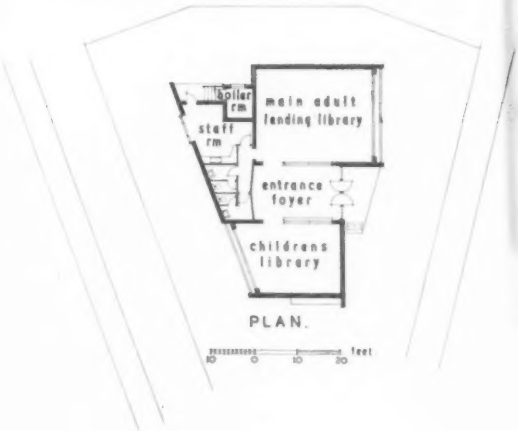
Services

The lighting consists of tungsten fittings concealed in the main library and diffused in the children's room and entrance hall.

Heating panels are set vertically under the windows in permanent reveals, using "Vectair" heating grilles at floor level. The heating is supplied from a thermostatically controlled gas boiler, which also provides hot water for the staff room and cloak rooms.

Furniture

The shelving and cabinets are of oak, wax polished,



with cupboards at base to provide storage space. Tables and chairs generally are cast aluminium. Window boxes under the main windows have corrugated iron fronts, painted royal blue.

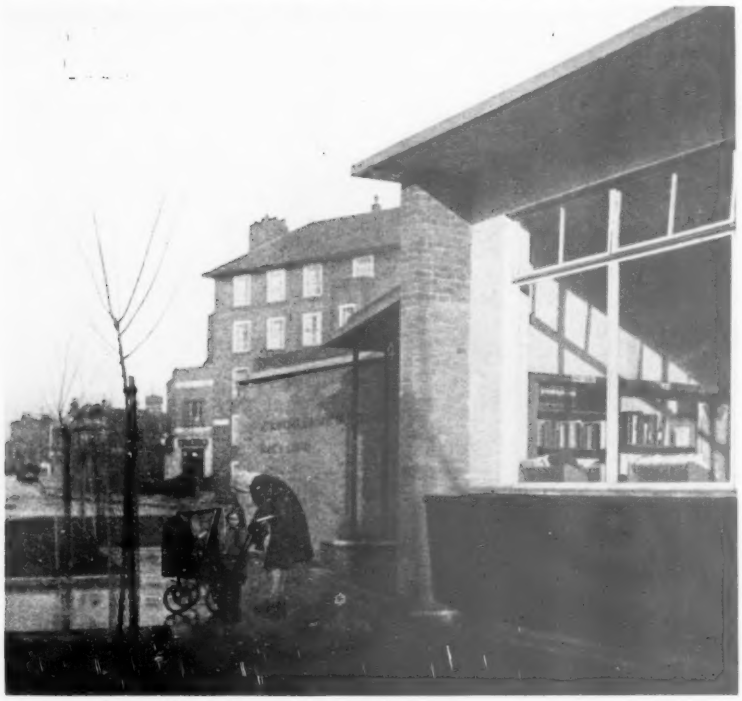
QUANTITY SURVEYORS: MESSRS. CROSS & HALL.

GENERAL CONTRACTORS: MESSRS. TERSONS LIMITED.

Heating Installation: Messrs. J. Jeffrey & Co. Ltd.
Rubber Flooring: Runnymede Rubber Co. Ltd.
Metal Windows: Crittall Manufacturing Co.
Shelving and Issue Desk: Kendon Shopfitters Ltd.
Furniture: Educational Supply Association.
Catalogues Cabinets: Libraco Ltd.

Above: Notice Board.

BRANCH LIBRARY · SHOREDITCH



Window boxes under main window painted royal blue.

MODULAR CO-ORDINATION

First Report of the British Standards Institution Committee. B.S.1708:1951

Part 1. The Preliminary Work of the Committee.

A. THE PURPOSE AND ADVANTAGES OF MODULAR CO-ORDINATION

The advantages claimed for modular co-ordination may be summarized as follows:—

(1) *Simplification of the planning of buildings*

Modular co-ordination would permit considerable simplification of the planning of buildings in the drawing office and would result in a saving of drafting time.

It would permit easier substitution of alternative materials and changes in specifications without the necessity of replanning.

(2) *Simplification of quantity surveying*

The co-ordination of materials and components by the use of a modular unit would save time and simplify the preparation of quantities.

(3) *Advantages in building operations*

The co-ordination of materials and components to suit a modular system would result in easier and more economical field erection with a reduction in the amount of cutting, waste and fitting on site and a consequent reduction in the risk of damage to materials and components.

Modular co-ordination would facilitate off-site and shop preparation of materials and components.

Setting-out and subsequent supervision of building work and building assembly would be easier.

The number of sizes of items required for any building would be reduced.

Estimating and tendering would be simplified.

(4) *Advantages in manufacture and distribution*

The number of stock sizes of materials and components and the size of stocks held against demand would be reduced.

The introduction of new designs and standards would be easier and manufacturers would know that such modifications would fit into existing plans or future layout requirements.

B. RISKS OF MODULAR CO-ORDINATION

The committee recognizes that, however great may be the advantages resulting from the application of modular co-ordination, certain risks may have to be considered. If too large a module is chosen it may produce, in effect, standardization in the design of buildings, instead of securing dimensional co-ordination only and leaving freedom of design to the architect. If the module chosen is too small, it may lead to an increase in the number of components to be regarded as stock sizes and to a demand for all possible combinations of small modular dimensions and thereby exclude the advantages of more limited ranges of standard sizes.

The application of modular co-ordination to building components would require an extensive programme of re-standardization. It would be necessary to consider the capital expenditure involved and any possible hindrance to production. It would appear to be inevitable that there should be an interim period during which non-modular standard units would be used but during which there would be a gradual transition to a complete modular system.

C. PROPOSALS FOR MODULAR CO-ORDINATION IN OTHER COUNTRIES

The committee has received a considerable amount of information regarding proposals for modular co-ordination which are being considered in other countries, and this information is summarized in the Appendix, together with brief comments on the various proposals. The advantages which can well accrue from international co-ordination are sufficiently obvious to need no stress.

It will be noted that the proposals may be divided into two categories. The first category suggests a module in the region of 4 in. which is either based on, or related to, the dimensions of bricks and from which may be built up a large variety of component sizes. The other category, recognizing the disadvantages of a multiplicity of sizes, has included a larger module, as an "overmodule," which is in the region of 3 ft. to 4 ft., this dimension being a multiple of a smaller module. It should be noted that all the proposals include a rectangular grid as the means of applying modular systems, with the exception of the French proposals in which a module of 10 cm. is standardized without a grid being suggested.

D. POSSIBLE ECONOMIES IN BUILDING PRODUCTION

It is clear from the information received by the committee that there is a great need for some simplification of both planning and building methods to avoid waste of time and materials which at present occur. The extent of this problem may be gathered from the following data:—

(1) *Drafting Time*

The committee has endeavoured to ascertain the amount of drafting time which would be saved in the preparation of detailed drawings when modular units are being used. Although this information is not complete, one example may indicate the size of the problem. In an office in which a number of school buildings based on the use of steel frames were being designed, 114 sheets of drawings were found to be needed for the steelwork for the first school. When a modular scheme has been developed it was found that 33 sheets of drawings of component parts were necessary, following which each school required only one general lay-out drawing, so that 41 sheets of steelwork drawings were adequate for eight schools although these varied considerably in layout. It appears probable, therefore, that when a modular system has been

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adopted and has become familiar to a drawing-office staff, the preparation of plans and working drawings will be much simplified. For example, it would no longer be necessary fully to dimension such drawings, since the use of the grid would indicate many sizes of, and often the position of, the various components.

(2) *Wastage of Materials*

Although precise figures are not available, it seems to be the usual practice to over-order building materials to the extent of 10 to 15 per cent to allow for cutting and waste. The extent to which this wastage may vary, according to the care with which erection of components is planned, is illustrated by the fact that the amount of plasterboard required to line a three-bedroom house varies by as much as 350 sq. ft. per house, according to the way in which the sheets are arranged.

(3) *Cutting and Fitting of Material*

Studies by the Ministry of Works have been placed at the disposal of the committee and show the large amount of time which is expended in cutting and fitting building materials on the site. The following figures give times relating to some materials used in the construction of semi-detached houses:—

Brickwork	5 to 15 per cent
Partition blocks	19 to 21 per cent
Plasterboard and other sheet materials	31 to 37 per cent
Timber	11 to 45 per cent, according to the extent to which the material is pre-cut before delivery to the site.

The above figures suggest that the methods now in use are *prima facie* uneconomical and imply that a more detailed examination of the problem would be justified.

E. PRACTICAL DEVELOPMENTS AND APPLICATION IN THE UNITED KINGDOM

In recent years an extensive programme of standardization of building components has been carried out by the British Standards Institution through its various committees. Although each committee works independently, there has been some co-ordination of the sizes of components, e.g. the sizes of wood casement windows are related to the sizes of bricks, but there has been no general attempt to develop a common dimensional basis.

There has, however, been some experience in the design and erection of buildings using modular systems. One of the first experiments in this country in the use of modular layout was a project for unit building carried out by the Crittall Manufacturing Co., about 1920. The work consisted of a small estate of houses constructed of concrete blocks, and the house plans were based on a module of 1 metre. The system was later altered to suit brick construction and a module of 3 ft. was substituted.

With the development of prefabricated construction during and at the conclusion of the last war, large numbers of houses were designed using modular systems. In most cases the module was selected to suit one particular material and, where necessary, other materials were manufactured in special sizes to suit the one standard material. Whilst this arrangement might prove suitable where houses were being built in large numbers in one locality to one design, it is evident that the full advantages of economy in production, coupled with freedom of design, which would accrue from a national or international system of modular co-ordination, have not yet been achieved.

There have been two attempts to establish a module of somewhat wider application than those indicated above. The first of these was a module of 8 ft. 3 in. put forward by the Schools Sub-Committee of the Ministry of Works Standards Committee. This has been widely used in the design of schools forming part of the post-war building programme. The second was a proposal for a module of 42 in. (later 43 in.), put forward by the Advisory Technical Panel of Local Authority Representatives (ATPLAR) appointed by the Ministry of Works. This module was used as a basis for several of the schemes for prefabricated houses referred to above but was found to be unsuitable for general application.

A more recent development is the application of a modular system to a series of railway buildings, intended for a wide range of purposes, in which are used specially standardized panels, structural members and other components, stocks of which are built up for this particular use. This scheme is of interest as it illustrates a solution of some of the practical problems involved, especially those regarding the thicknesses of walls, wall finishes and joints between components which, in some quarters, have been thought to be so complex that they would render impracticable the application of modular co-ordination to most types of buildings.

As an example of the application of modular co-ordination has been seen in a group of primary schools being erected by one Authority in the Home Counties. In this case the module of 8 ft. 3 in. was used for the plan and the verticle module was determined by the nature of the building. The method of construction used consisted of concrete roof and wall slabs on a steel frame but other materials might have been used. Here again it is evident that the thicknesses of walls and wall finishes do not give rise to any serious problems.

Part 2. Early Findings of the Committee

After general discussion and at an early stage of the committee's work the following resolution was adopted:—

"That this committee thinks that there is a case for the application of a general modular unit:

(*a*) to assist architects and others concerned with the design of buildings or parts of buildings, and

(*b*) as an aid to the building industry including the manufacture of materials and fittings."

Subsequent discussions and examinations of documents from other countries and of the evidence brought or sent to the committee and relating to work in this country have established general agreement on the desirable type of module and the method of its application. This may be summarized as follows:—

(1) There is little advantage in attempting to arrive at a module for building products. The dimensions laid down by these standards are such that no practicable module can be found which will fit more than a small minority.

(2) The advantages in manufacture and site work to be looked for by the introduction of a module are greatest where the large building elements, such as a slab and sheet materials, windows and beams are concerned. Smaller units, such as bricks and tiles, are essentially more flexible in use and can more readily be assembled to give any required overall dimensions without much serious loss of time and material. For this reason the committee feels that small modules of 4 in. and 10 cm., being considered and developed abroad, are misconceived, because stress is laid on just that part of building work in which there is least to be gained from modular standardization and that little account is taken of the tendency towards the industrial production of larger elements.

(3) To gain acceptance, application of modules to these larger elements must be carefully related to the dimensions of the basic planning factors which occur in building design and these are derived ultimately from the human use of buildings. Door openings, passages, stairs, w.c.s, and many other elements, have minimum sizes derived from the average shoulder width of human beings. This dimension, together with the necessary clearances, would establish the plan module as somewhere in the range of 33 in. to 48 in. The committee feels that such a module, based on the human use of buildings, offers a means by which the requirements of production can be reconciled with those of design. It is to be noted also that it automatically gives sizes convenient for man-handling during fabrication and on the site.

(4) In choosing a dimension within the range of 33—48 in., consideration should be given to the following points:—

(*a*) *Economy in planning.* It is desirable to select the smallest module which will fulfil the basic requirements described in the previous paragraph without resulting in cramped design.

(*b*) *Minimum dislocation of existing standards.*

(*c*) *Relationship to modular standards being developed in the United States and in Europe.* While exact relationship to the United States 4 in. module is feasible, relationship to the European standards, which are expressed in centimetres, can only be approximate.

(5) Therefore, a dimension of 40 in., applied in the form of a planning grid, 40 in. in both directions, should receive consideration as the basis for modular co-ordination.

Part 3. The Later Work of the Committee

A. AMPLIFIED TERMS OF REFERENCE

The Building Divisional Council agreed in 1948 that the committee should continue and, as an extension of its early work, examine the whole question of modular co-ordination. It was decided to study:

(i) the application of a horizontal module of 3 ft. 4 in. (40 in.) in the planning of buildings, with particular reference to the relationship between this module and a vertical module, and

(ii) the relation of modular dimensions to the internal and external dimensions of buildings and to the carcase or final finished surfaces as affecting both plans and sections.

B. HORIZONTAL MODULE

The first approach to the detail problems arising from the use of a horizontal module was to examine whether it could be applied to the planning of buildings without resulting in waste of space or undue restriction upon design. The inquiry was centred on the proposed module of 3 ft. 4 in., but, at the same time, alternative modules of the same order of magnitude, in particular a module of 3 ft., were examined for purposes of comparison. The information obtained from this comparison has been extremely useful in placing the 3 ft. 4 in. module in correct perspective.

It was felt that the question of waste of space might be most important in housing where sizes of rooms are fairly precisely controlled and where the overall cube of the building is of great importance. Attention was therefore first given to the application of the module to housing. As part of this examination a number of plans from the Ministry of Health Housing Manual, 1949, were redrawn on the basis both of the 3 ft. 4 in. module and the 3 ft. module. The resultant plans were then compared with the original plans and the following conclusions were reached:—

(1) The two sets of plans based on these modules are substantially indistinguishable from the Ministry of Health type-plans on which they were based and there has been no significant change in planning character due to the adoption of either module.

(2) The particular examples indicate that the 3 ft. module gives slightly smaller floor areas than the Ministry of Health type-plans but the same minimum requirements are observed.

The 3 ft. 4 in. module gives slightly larger areas than the Ministry of Health type-plans, the extra space being provided in the main rooms and not in the circulation areas or as waste space. For this reason the adoption of the 3 ft. 4 in. module has the effect of providing extra living-space without a *pro rata* increase in cost, thereby increasing the value of the house to an occupier.

In both cases the variations in estimated costs were quite small and, on the average, did not exceed changes of ± 0.5 per cent of the cost per house. On a typical scheme for 100 houses of varying plans, however, the changes would be within ± 0.25 per cent of the cost of the scheme as a whole. These comparisons are based only on the changes in floor areas and do not take into account the probability of reduction in costs which might be achieved by a more complete modular co-ordination and standardization of components and materials used in the construction of houses.

(3) The plans based on the 3 ft. 4 in. module appear to have certain qualities of scale and proportion which are superior to those arising from the use of the smaller grid. While the 3 ft. 4 in. module can be employed as a centre-line grid this was not found possible with the 3ft. module as this gives clear passage-ways of insufficient width. It is therefore sometimes necessary to place the partitions on one side or the other of the grid lines. It is thought that the centre-line arrangement which is possible with the 3 ft. 4 in. module might lead to some additional advantages in the practical application of modular co-ordination.

(4) In an experiment of this character, in which an attempt is made to base modular plans on existing plans, special difficulties are encountered which would not occur in practice; for example, in three out of twelve modular plans produced, in order to follow the Ministry of Health type-plans, it has been necessary to have one external wall which does not coincide with the grid and some of the internal walls have had to be placed midway between the grid lines. If no attempt had been made to follow the type-plans rigidly, this difficulty in two out of three cases could have been avoided while still observing the same requirements and providing essentially similar houses.

(5) The examples, even though small in number, indicate that modular co-ordination can be applied to housing without giving rise to waste of space or leading to undue restriction on planning. It is felt that the experiment represents the most stringent conditions likely to be met and that, in other fields, where buildings are designed on a larger scale, simpler problems will be encountered.

Following the above investigation on housing a similar inquiry was undertaken into the use of a module for larger buildings: those immediately available were examples of schools and telephone exchanges. Here it was found that a module of 3 ft. 4 in. was quite suitable for the larger rooms, since it provided an increment in size which was small in proportion to total floor areas, and thus allowed sufficient flexibility in planning. When the requirements for smaller rooms were examined, it was found that these generally coincided with the requirements for rooms in the houses which are approximately the same dimensions and frequently serve similar purposes. It was therefore possible to apply the 3 ft. 4 in. module under the same conditions as had been found applicable to housing.

During these discussions the views and experience of the Ministry of Education were obtained. The committee was informed that a number of plans for schools had been worked out using the 3 ft. 4 in. module. These represented typical schools and it was found that this module was quite satisfactory for this purpose. It is also believed that it could be applied, with equal success, to other types of schools.

C. VERTICAL MODULE

The committee agreed that the establishment of a vertical module is necessary if the full advantages of modular co-ordination are to be obtained. In the absence of a vertical module, the merits of modular co-ordination would be confined largely to economies in the offices of architects, engineers, quantity surveyors and builders and would not lead to the greater advantages which might be obtained by comprehensive standardization of materials and components. Further, although the vertical module must be related to the horizontal module it became evident that vertical increments limited to 3 ft. 4 in. would be too large for many purposes. To provide sufficient flexibility in designing it would be necessary to use a smaller module as a basis which preferably should be a simple fraction of 3 ft. 4 in. It would appear that 8 in. might be the most suitable fraction for this purpose. It is, however, desirable to reduce the number of standard sizes which might result from the use of so small a vertical module. It is therefore suggested that a range of preferred sizes should be agreed upon, all of which would be multiples of the basic vertical unit, so that components could be arranged in a variety of patterns.

The committee has made an analysis of vertical dimensions such as heights of window-sills, transoms and ceilings, as commonly found in buildings and as related to human use, and various alternative scales have been applied to these heights. As a result the committee recommends a series of preferred sizes, all of which are multiples of 8 in., for the vertical dimensions of buildings and building components. These are set out in Fig. 1. In the choice of these preferred sizes, care was taken that, in conjunction with the horizontal module, a variety of proportions should arise and not merely squares, double squares, etc. It is thought that while this approach would permit flexibility in design, manufacturers of com-

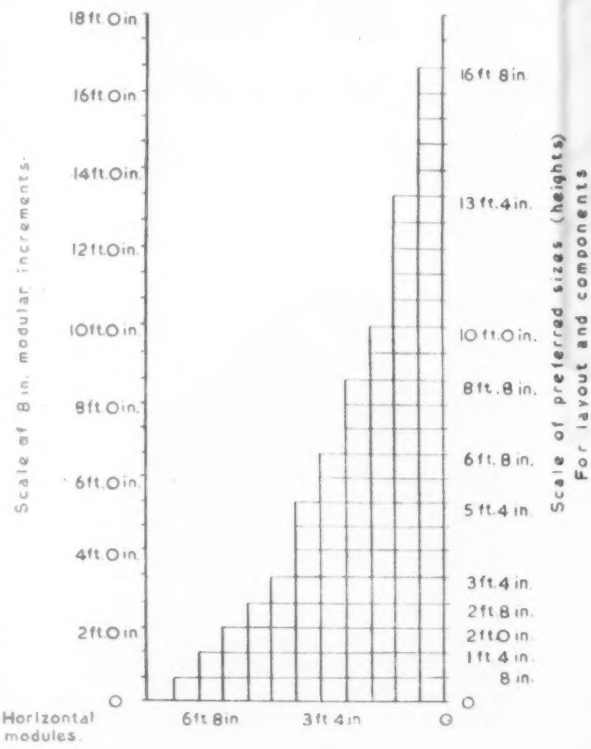

Fig. 1. The vertical 8" module: Preferred sizes. (Reproduced from B.S. 1708:1951.)

ponents would be encouraged to produce limited ranges of products based on the selection of appropriate sizes.

Part 4. Practical Applications

A. WALL THICKNESSES

The request from the Building Divisional Council for the committee to examine the relation of modular dimensions to internal and external dimensions of buildings, to wall thicknesses and to the carcase or to the final finished surfaces, implied detailed examination of the various methods of applying modular dimensions in the production and assembly of building materials and components. The committee is aware that several solutions have been devised, both in this country and abroad, for dealing with these problems and buildings have been designed and erected using modular systems. The committee is satisfied that several systems have proved to be more or less satisfactory; but any difficulties encountered cannot be regarded as a justification for summary rejection of modular co-ordination. The committee does not, however, feel that critical comparison of the various methods and the subsequent evolution of a standard method of application would be justified until the principles of modular co-operation have been accepted in general terms and basic modules and their dimensions decided upon. Thereafter it is certain that inquiry must be carried forward into the field of practical experiment and the committee is of the opinion that such experiments will have to be organized in the near future.

B. PRACTICAL APPLICATIONS TO EXISTING STANDARDS

The committee has not been able to express any opinion on the effect of a 3 ft. 4 in. module on existing British Standards, as this depends largely on the decision to be taken on the relationship of the module to wall thicknesses. In order to reach conclusions on these points it will be necessary to tabulate and to work out in complete detail the dimensions of individual materials and components, so that the problems involved may be placed before manufacturers as an indication of the extent of the changes which may be involved in each industry.

At the present stage, therefore, the committee is not in a position to supply manufacturers with precise dimensions for products based on the suggested module; this must form part of a programme of further investigation and practical experiment which must be carried out if a scheme of modular co-ordination is to proceed. The committee wishes further to point out that the adoption of modular co-ordination may mean that some materials and components, as delivered, might of necessity be more costly, but it is believed that any increases in initial cost would be offset by savings in the cost of a finished building as a whole, due to easier assembly, reduced wastage and economy both in initial design and during the whole progress of the work. If modular co-ordination is adopted the consequent changes in production of materials and components would, of necessity, be a matter of long-term application. In the meantime, part of the advantages envisaged may be obtained by the use of modular components side-by-side with non-modular components, which is the present practice in other countries which have adopted modular co-ordination to any extent.

Part 5. Modular Co-ordination Abroad

Since the early work of the committee was communicated to the Building Divisional Council in November, 1948, a considerable amount of information has been collected, additional to that given in the Appendix regarding the development of modular co-ordination in other countries. To a large extent this new information serves to confirm the details in the Appendix. It shows, however, a rapidly growing interest in the subject and some progress in practical applications. The major new developments are summarized as follows:—

Belgium, France and Italy. These countries have continued their investigations, and a number of modular standards have been published.

Norway and Sweden. These countries are making use of the work done by the Building Standards Institute of Sweden, but national modular standards have not yet been published.

Poland. Experiments are being carried out with both 10 cm. and 12.5 cm. modules, the latter being thought to be more suitable for traditional brick sizes.

Brazil. A preliminary standard using a 10 cm. module has been prepared, and special attention has been paid to the combination of modular and non-modular units during the transition stage.

It was clear from the discussion on this subject at the meeting of ISO Technical Committee 59—"Building Construction," held in Paris in June, 1949, that almost every European country and many non-European countries are working on the problem. Only a few countries, however, notably U.S.A. and Belgium, have reached the stage of practical application in the form of national modular standards.

The committee state that it has had helpful co-operation from the R.I.B.A. Science Board Study Group on this subject through the attendance of Messrs. P. L. Cocke, D. D. Harrison, R. N. Wakelin and J. R. Weeks at a number of its meetings.

The Report concludes with an Appendix summarising Oversea Standards and Proposals for Modular Planning. The Report is B.S. 1708: 1951, published under the authority of the Building Divisional Council by the British Standards Institution, price 2/6.

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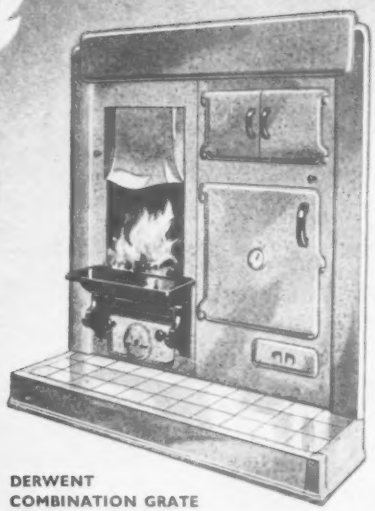

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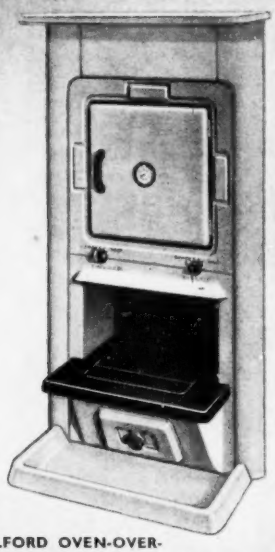

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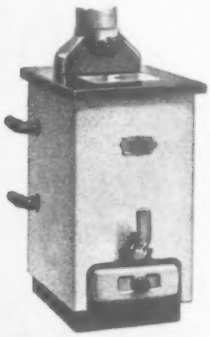

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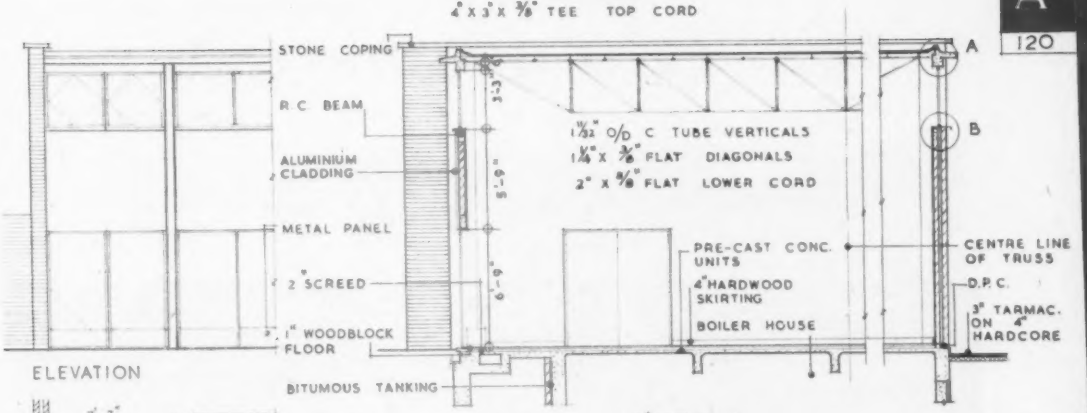
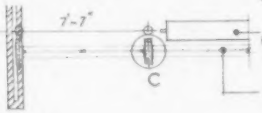


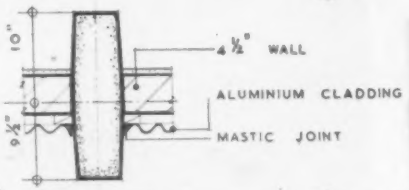
ELEVATION

SECTION

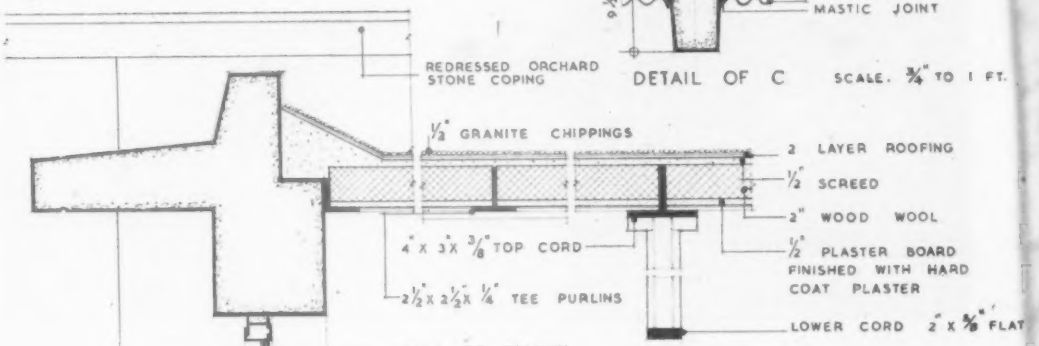
SCALE. $\frac{1}{8}$" TO 1 FT

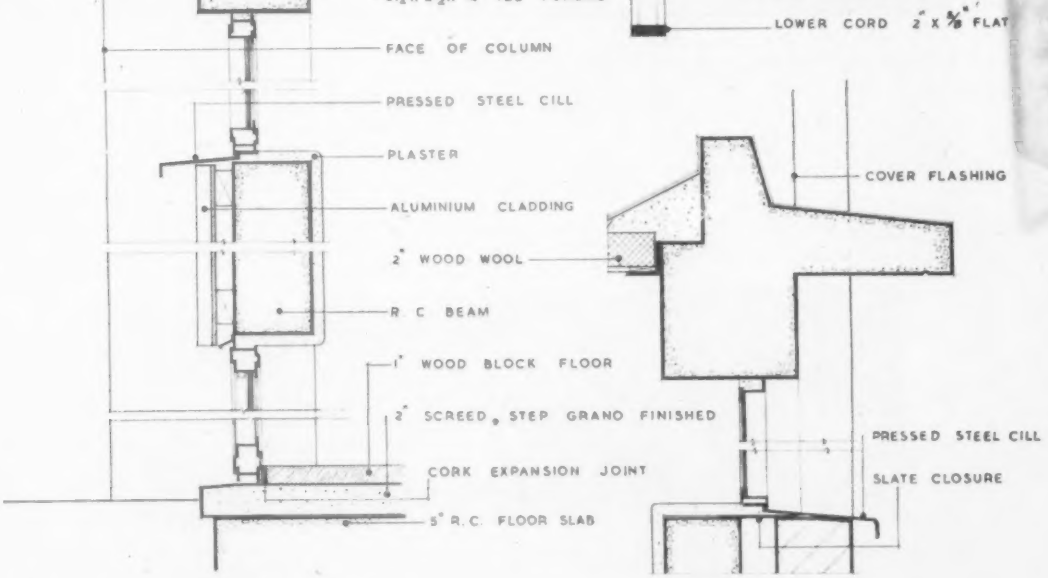


PLAN



DETAIL OF C SCALE. $\frac{3}{4}$" TO 1 FT.


REDRESSED ORCHARD STONE COPING
½" GRANITE CHIPPINGS
2 LAYER ROOFING
½" SCREED
2" WOOD WOOL
½" PLASTER BOARD FINISHED WITH HARD COAT PLASTER
4" x 3" x ⅜" TOP CORD
2½" x 2½" x ¼" TEE PURLINS
LOWER CORD 2" x ⅜" FLAT



1/8 F S SECTION THROUGH WALL

1/8 F S DETAILS OF A & B

SCHOOL HALL CONSTRUCTION ERITH LESSNESS HEATH • ELIE MAYORCAS

120 A D 4

SCHOOL HALL CONSTRUCTION, ERITH, LESSNESS HEATH

ARCHITECT: ELIE MAYORCAS

NEWS of the BUILDING INDUSTRY

INTEREST

MR. W. K. LAING, Chairman of the London Regional Joint Apprenticeship Committee, presided at the Annual Prize-Giving held in the L.M.B.A. headquarters in Bedford Square, for apprentices in London who, during the past year, have been awarded prizes from the Building Apprenticeship and Training Council Welfare Fund for work both theoretical and practical at technical schools.

The prizes were presented by Mr. G. C. Marchant, District Secretary of the National Association of Operative Plasterers and past Chairman of the Joint Apprenticeship Committee, and addresses were given by Mr. J. C. Cox, Secretary and Registrar of the B.A.T.C. and Mr. Woodbine Parish, Vice-President of the L.M.B.A.

Fifty-three apprentices received prizes. The total number of prize-winners in London was 90, but some of the prizes had already been presented at ceremonies at technical schools.

The Minister of Works sent a letter of greeting to the President of the L.M.B.A. In it he said:—

"I cannot emphasize too strongly that the need for apprentices is one of the most pressing requirements of the building industry at the present time. The industry has ahead of it a large volume of work, which will continue for an indefinite period and can only be carried out if there are enough skilled men in the industry. To keep up the skilled labour force we must rely on a sufficient number of boys coming forward as apprentices. In London particularly there is a great need not only for more boys, but also for employers willing to take them as indentured apprentices."

*

"HIGHER PRICES DO NOT MEAN HIGHER PROFITS," said Mr. G. B. Crowe, Deputy Chairman of the T.D.A., speaking at the Dorchester Hotel on Wednesday, March 7. "They bring heavy financial responsibility to importers and there will be a strong element of competition for business which will still be restricted by consumer licensing. At the same time we shall not see prices of softwood, hardwood or plywood at an economic level until the right to buy is restored to the trade for all the countries of the world and bulk buying is finally and completely abandoned. Broadly, the Board of Trade buys in the dollar and Iron Curtain countries, the timber trade buys elsewhere. This separation of the country's buying power into two artificial sectors is a handicap to both in obtaining the best results. We can only hope that the day when this full responsibility is returned to the trade will not be unduly delayed.

"The change in government policy in its allocation of dollars to the purchase of North American timbers will ensure the import this year of a very much greater quantity of softwoods from these sources than we have seen for many years. This, coupled with probable purchases from the Iron Curtain countries, and the efforts of the timber trade to get supplies from the Baltic, will mean a total import this year approaching double that of last. Timber may then be the one essential raw material able to meet the re-armament programme in addition to the normal calls of industry and building.

"It is a matter of general agreement that stock levels should be raised to a figure that can safeguard us against any breakdown in imports and also provide something of a bargaining counter when buying. Nevertheless, by the autumn there should be a surplus which would justify a progressive relaxation of licensing. For steel, non-ferrous metal, paper and the long list of other materials in very tight supply, timber could provide an important relief, reversing the roles played in the last world war when timber was the material to suffer substitution by every possible alternative."

The Timber Development Association is to launch within the next few months a publicity campaign to re-educate the public in the intrinsic merits and the availability of timber.

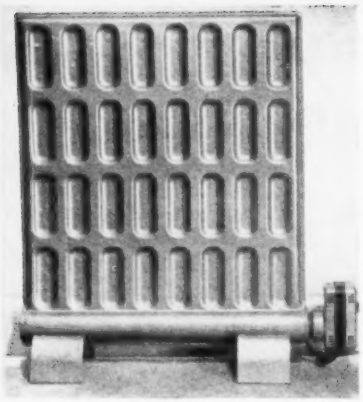
*

FINAL APPROVAL from the Government is still pending on the 600 sq. ft. £500 Tarran House. Modifications are likely to be called for it is understood.

NEW TROUGHTON & YOUNG SHOWROOM

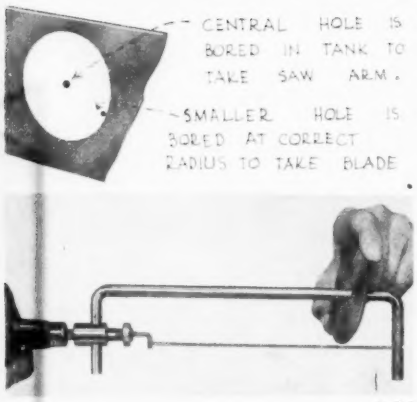
A number of new designs of electrical fitting, many of which will be seen in one form or another at the Festival of Britain are on show in the newly opened showroom of Messrs. Troughton & Young in Knightsbridge. There is ample evidence of a return to colour and texture in lighting fitting design. Many of the pendants and standard shades are designed to be interchangeable in a variety of ways. Some of the fittings which have counterbalances to adjust the height of the lamp have the quality and delicacy of "mobiles." The range of fittings is illustrated in four newly produced catalogues.

Some of the apprentices who were awarded prizes at the headquarters of the London Master Builders Federation recently. In the left foreground is Mr. D. E. Woodbine Parish, senior vice-president of the L.M.B.A. and Mr. W. K. Laing, chairman of the London Regional Joint Apprenticeship Committee is in the centre of the picture.



SERVICES, HEATING B3/14

The radiator illustrated is the ½ kilowatt model in a range of oil filled radiators. Other models are 1, 1½ and 2 kilowatt types. The depth of all models with feet is 7½ in. overall and for wall bracket types 2½ in. from centre line to wall face. Thermostatic control is incorporated. The standard colour is golden beige but colours and metallic finishes are available. The price of the ½ kilowatt model is £9 5s. 0d. plus £6 15s. 4d. purchase tax. All models can be supplied on castors at an extra cost of £1 19s. 0d. The ½ kilowatt, wall-mounted model can be supplied with towel rail. The thermostat range is 52–82° F. ambient temperature.

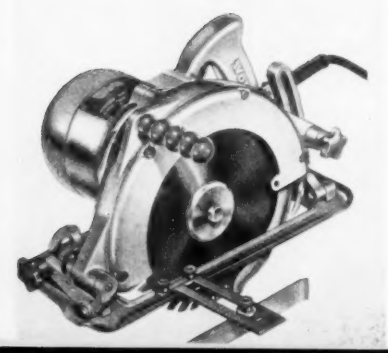


PLANT, HANDTOOLS E3/11

This adjustable cutter has been designed primarily to cut holes from ¾ in. to 5 in. diameter in tanks or in positions not easily accessible from both sides. The range of materials which can be cut includes iron, asbestos, plain or corrugated, plastics, wood, etc. The only preparation necessary to cut a hole in a tank is the drilling of two holes (as illustrated) to admit the arm and the saw. The latter clips into one of a number of slots in the saw frame to give the required diameter. Each slot represents a clearance size for a standard pipe thread. The disc cut out is automatically removed on the saw arm. Price of the saw is 12s. 6d.

PLANT, TOOLS E3/12

First produced in January of this year this twin pipe clamp has been designed to hold pipes and tubes for butt welding. The clamp is suitable for pipes with nominal bores ranging from 2 in. to 12 in. The clamps hold the pipes from the outside by a toggle-actuated claw and can be eased off after tacking and rolled round as welding proceeds.



PLANT, WOODWORKING MACHINERY E1/5

A new 10 in. portable electric saw which provides the operator with protection from a spring loaded safety guard of sheet steel which is automatically pushed back as the machine is fed into the work. A line of cut indicator for straight and bevel cuts up to 45° is provided on the leading edge. Depth of cut is determined by hand wheel adjustment on a vertical quadrant. A range of blades is provided which includes a combination blade for ripping and cross-cut work.

The saw will deal with wood, wallboard, plywood and metal.

MOSAICS

The names and addresses of manufacturers of any item illustrated in MOSAICS, together with more detailed information relating to their products—including price and availability—will be forwarded to readers on request.

Letters should quote the serial number and be addressed to :

The Associate Editor,
The Architect and Building News,
Dorset House,
Stamford Street, S.E.1.

Please mark the envelope MOSAICS.

M.o.W. LECTURES

March 19

Standard Method of Measurement.
7.15 p.m. at Electricity Showrooms, The Hayes, CARDIFF.

March 20

Standard Method of Measurement.
7.15 p.m. at The Guildhall, Civic Centre, SWANSEA.
Mechanization of Small Jobs.
7.0 p.m. at Technical College, WORKINGTON.

March 21

Heating Research for Houses.
7.0 p.m. at Hereford College of Further Education, Newtown Road, HEREFORD.
Essentials of Good Concreting.
7.15 p.m. at Heriot-Watt College, EDINBURGH.
The Construction of the Broadway Tunnel, Derby Main Drainage Scheme.
7.15 p.m. at The Guildhall, Market Place, DERBY.

March 28

Painting New Plaster and Cement.
7.15 p.m. at Building Department, Technical College, Cauldon Place, STOKE-ON-TRENT.

—CORRESPONDENCE—

Dear Sir,

The writer always reads with interest A. Foreman's article "Good, Bad or Indifferent." In Article 23 on Sanitary Fittings your paragraph about strength of lavatory basins is interesting. The best material for these is vitreous china. This ware is very strong and when you mention minor accidents breaking basins, we would say a standard test in our showroom in connection with vitreous china is to drop a ½ in. lavatory tap in same without any unfortunate results. Vitreous china is non-absorbent, does not craze and will stand up to boiling water.

As regards expense, it is only approximately 4s. dearer than a 22 in. by 16 in. earthenware basin. Its approximate weight (22 in. size) is 35 lb. against 26/28 lb. for an earthenware basin.

As regards size of basins, there seems very little prospect of a larger size than 22 in. by 16 in. being generally specified, particularly for housing schemes. Available space and cost play a large part in determining this size.

Yours faithfully,

A. Harmsworth

Extract from a letter from Shanks and Company Ltd.

GOOD, BAD OR INDIFFERENT?

No. 27—By A. FOREMAN

Noises in buildings - No. 1.

A FEW weeks ago I was visiting some friends who have just moved into a flat after sharing a small detached house belonging to the wife's parents. They were very pleased to get a place of their own, but said there was one quite serious drawback, namely the noise from the adjoining flats. Apparently, they were not alone in their complaint as all the other tenants they had met agreed with them. Naturally I started to look around to see what the construction of the building was like. I soon realised why they were complaining as the floors were simply plain-edged boards laid on the lightest possible wood joists with plasterboard ceilings and you could hear every movement and sound from the rooms above while the walls between the flats on the same floor were little better.

This started me thinking about the whole question of sound transmission in buildings. The need for preventing this is most obvious in flats, but the problem also occurs in other types of buildings. Maisonettes are really another form of flat but it is here that the trouble is most pronounced due to the type of construction so often employed. With single-family houses there is always the problem of "the people next door" and this has made terrace houses unpopular and semi-detached houses acceptable only because of their lower price in relation to detached houses. Even in the latter, family life is much easier if the noise from the living room does not penetrate to the bedrooms and vice versa.

There are admittedly several difficulties but experiments have shown that much can be done towards improvement if sufficient care is taken. Before getting down to details, it might be as well if I summarized the three ways in which sound can be transmitted through a wall. First, there is direct air-borne transmission through cracks and openings. Next, there is air-borne sound transmitted because the wall picks up the sound, begins to vibrate, and then generates a corresponding sound on the other side. Finally, impact noises are created by the structure vibrating under impact and generating sound on both sides of the wall.

The various remedies are to reduce the amount of noise at its source, absorb the sound in the room where it is created, to avoid transmission through cracks, to make the dividing walls heavier so that they will not vibrate so easily, and finally to divide the walls so that vibration on one surface does not cause vibration on the other.

Reduction of the noise at its source may seem to be an obvious, but not very practicable, solution. I am thinking, however, of the noises that are due to the building rather than its occupants. Enquiries made amongst householders have shown that W.C's and cold water tanks are sources of general annoyance. To some extent the noise can be reduced but it is always worth while taking care in planning so as to place them where they are least objectionable. Tanks and cisterns should not be fixed against a bedroom wall —I have even encountered a tank fitted inside a bedroom which seemed to take hours to fill after the household had gone to bed—the W.C's should not be fitted above a living room. If it is necessary for a W.C. to be next to a bedroom it may be possible to insulate the wall by cupboards at this point.

Attention should then be given to the equipment itself. For example, water taps should be carefully maintained to prevent water hammer and ball-valves should be fitted with silencer pipes; some types of W.C. cisterns are inevitably noisy and should be avoided; and can no one invent a moderate priced quiet method of flushing?

Bath wastes are another source of trouble and frankly I have not found a solution yet, other than arranging the pipe so that it does not create a whirlpool effect in the hopper where a lot of the noise seems to originate. In some parts of the country it is not usual to fit anti-syphon pipes and in a block of flats or an hotel this can lead to noises coming from wash basins which are most unpleasant if they are fitted in bedrooms. I know hotels where it is impossible to sleep after some of the guests have started to wash in the morning.

Absorption of sound in the room itself is only a partial solution. Thick carpets and curtains are a help but unfortunately they are beyond the reach of many people today; the use of underfelts, especially under stair carpets, is a big help.

Transmission through openings, such as sound passing out of one window and in the next, is unavoidable, but some cracks and openings can be reduced in size if not avoided. I have in mind, the clearances round a door which allow quite a large amount of sound to pass and they should therefore be kept as small as possible. This is particularly so in the case of a door leading from an access balcony or stairway to a flat.

The addition of extra weight to a partition is not usually a practical solution as walls would need to be very thick indeed to be effective barriers. However, this principle can be applied in some smaller cases. For example, flush doors transmit sound less than panel doors, because of the absence of their light panels.

The main field for improvement therefore lies in the adoption of discontinuous construction. Ideally each room should be a complete box completely detached from the surrounding boxes and any piece of noisy equipment should be insulated from the surrounding structure. In next week's notes I shall have something to say about this aspect.

THE PRINCIPLES OF STRUCTURAL WELDING

No. 2.—By Rolt Hammond, A.C.G.I., A.M.I.C.E.

TECHNIQUES

There are four main techniques used in gas welding: (1) the leftward technique; (2) the rightward technique, (3) the vertical technique; (4) linde welding. These will be discussed in the next article.

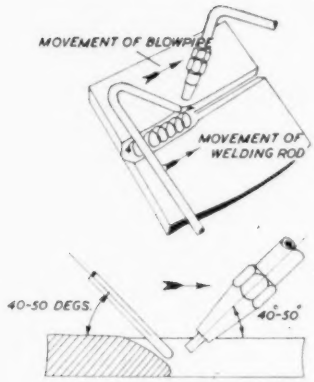
Leftward technique.

IN this method of welding, the blowpipe travels from left to right. For steel plates greater than 1 in. thick, each of the two plates to be joined must have the edges bevelled to an angle of about 45 degrees. For plates greater than this thickness, the amount of metal needed to fill the gap will be so great that the work cannot be carried out in a single run. For thicker plates more than one layer of weld metal must be deposited; this is not so satisfactory as a weld deposited in one run. The above angle of vee cannot be reduced because the blowpipe points to the left and welding takes place in that direction; the heavy pressure from the nozzle jet tends to drive the molten metal towards the walls of the vee which have not been reached by the flame.

Rightward technique.

In the rightward or backward technique, the blowpipe is moved from left to right (Fig. 1), which means that the torch points towards the part of the weld that has been made, exactly the opposite of the leftward technique. Rightward welding is mainly employed for welding of horizontal and underhand type; but can be used equally well for vertical and overhead welding, for butt and fillet welds in steel pipes and for fillet welds in steel plate and sections. In this technique—now more widely used than the leftward technique—bevelling of the plate does not become essential until plate thicknesses of $\frac{5}{16}$ in. and over are reached. Below this thickness complete fusion throughout the depth of the plate can be obtained without bevelling. There is also a considerable economy in the use of filler metal as compared with the leftward technique. Although bevel will be necessary for plates above $\frac{1}{8}$ in. thick, it need only have an included angle of 60 degrees as compared with the 90 degrees required for the leftward technique. This results in a great saving in weld metal and in a speed-up of the rate of welding.

With rightward welding, the welding torch must be of greater diameter at the nozzle, to ensure good control of the flow of weld metal and added speed of operation



RIGHTWARD METHOD OF WELDING

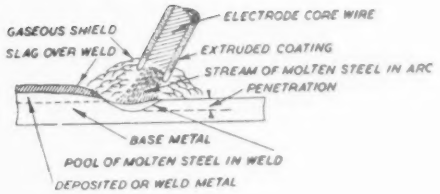


Fig. 1.

Moreover, weld metal is not driven into unheated regions of the vee, because it is checked by the pressure of the flame so that it cannot flow beyond the desired point. The improved control of metal thereby obtained increases the thickness of plate which can be welded without having to put down two or more layers of weld metal to ¾ in. Welding speed therefore will not fall off as plate thickness increases, but will remain approximately in proportion to the thickness of the plate.

Rightward welding has the added advantage of being readily visible. Both the bottom and walls of the vee are exposed to the view of the operator before the pool of weld metal has reached them. This factor contributes towards better fusion and penetration. Examination of the underside of the weld, shows an evenly deposited layer of weld metal, so that with this technique properly employed the weld metal gets right to the bottom of the vee and the weld is sound. Moreover, this is the only gas welding method whereby thick steel plates can be joined together edge to edge, without employing a vee, in a single pass, yet at the same time leaving sufficient metal to form not only an even bottom surface but also a bead of weld metal on the top.

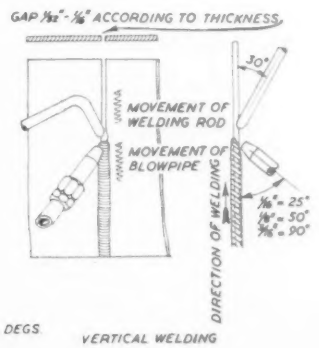
Rightward welding however, can only be completely successful if torch and welding rod are held correctly and if they are of the right dimensions. The rod should not be moved in a jerky or irregular manner. The bottom of the vee should be in a completely fused condition, and the surface to be united must be prepared in the appropriate manner. Torch and flame must be vertical between the two edges to be united, and the welding rod must be bent so that the piece gripped by the operator is horizontal. The end of the rod upon which the welding flame plays should be at an angle of from 30 to 40 degrees to the plate, and the torch should be held so that it makes an angle of between 40 and 50 degrees with the surface of the plate. These angles, and the vertical position of both rod and torch are essential for success. If they are not maintained within the above limits the walls of the vee may not receive equal amounts of heat, so that the weld metal may be deposited in an irregular manner.

These angles also ensure that the operator is able to control the flow of the weld metal, owing to the fact that the rod is fed into the weld at a steady rate, and thereby the distribution of heat is even over the weld. The included angle between rod and torch should always be maintained at 100 degrees. It is also important that the tip of the inner cone of the flame shall be slightly below the surface of the material being welded. If the tip of the cone is clear of the surface, the heat will be too widely dispersed so that zones on each side of the weld will be too strongly heated.

In addition to maintaining the angles to which reference has been made above, the metal should be fused right down to the very bottom of the joint and such fusion clearly demands that a great deal of metal shall be melted; in other words, appearance of the finished weld is only an indication that it is sound. When the plates are bevelled off at the edges to be welded, the bottom third of the plate depth must be melted and this will involve very close control of the flow of the weld metal. It is the appearance of the underside of the weld which is all important, since this reveals the degree of penetration of the metal in the joint. Fig. 2 shows vertical welding and indicates suitable angles and the movements of blowpipe and rod.

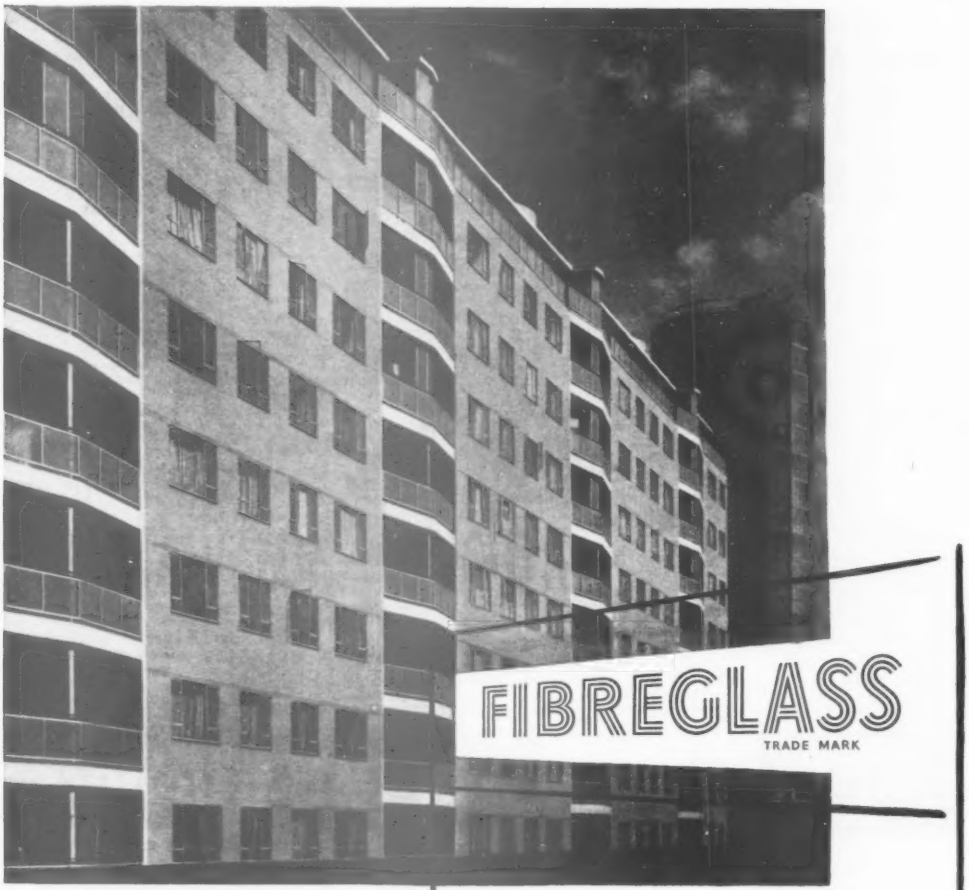
ARC WELDING

In arc welding, a covered electrode is employed. Welding current is supplied to the electrode through a special holder by means of a flexible cable. The arc is struck between the metal core of the electrode and the work, and is maintained by flow of the current. The coating or covering on the electrode is of such a composition that it forms a protective gas shield around the molten steel which flows from the electrode. The electric arc thus formed is estimated to have a temperature of from 3,300 to 3,400 degrees Centrigrade, so that the molten steel flows to the joint in a white-hot stream. If the latter is exposed to the surrounding atmosphere, it may be contaminated by various gases and the gas shield provided by the volatilized covering ensures adequate protection against this. In addition, when the weld cools down to room temperature, a slag is formed on top of the weld which acts as a protective covering for the top surface of the weld, and ensures that the metal will not cool down too rapidly. The general operation is shown in Fig. 1. Although welding can be done with bare electrodes and by a variety of automatic means, the most usual method of interest to the builder and civil engineering contractor is the arc welding system employing a covered electrode.



VERTICAL WELDING

Fig. 2.



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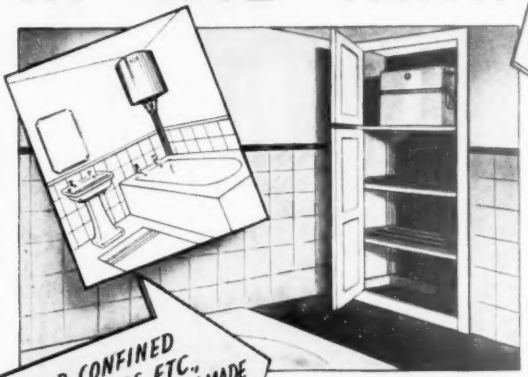

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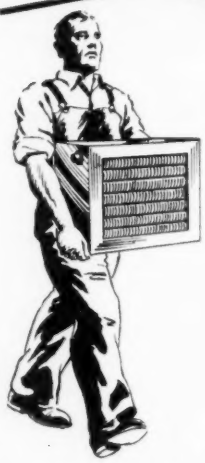

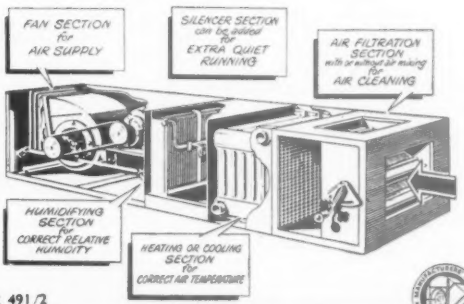
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AIR CONTROL INSTALLATIONS LIMITED

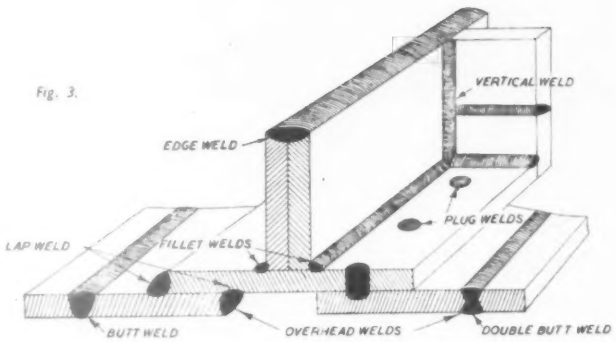
The choice of alternating or direct current welding equipment would appear to depend upon economic factors. The former is low in first cost and in running cost, having fewer working parts. It does not consume current when welding is not in progress, it is simple in operation and there is an absence of fast moving parts which therefore reduces maintenance costs. Direct current equipment, on the other hand, can be employed for a much wider range of materials and is better for the welding of light gauge sheets which have to be welded with low arc currents.

With direct current welding, a difficulty known as "magnetic arc blow" occurs, which arises from interplay between magnetic fields and the work being welded. This can be overcome by altering the location of the return cable in relation to the work, by altering the position of the work, or by winding one or two turns of the cable carrying the current around the work; or by altering the position of the work. Most direct current welding machines are designed for use by one operator, and the generators are driven either by petrol or diesel engines, or by electric motor where that may be more convenient. Alternating current welding equipment can be supplied for a single operator or for a number of operators. In recent years there has been an increase in the use of alternating current welding equipment. The most essential requirement of a welding generator is steady current flow at any particular current setting. The generator should not only provide current of the right voltage and amperage, but must be so constructed that even when the electrical resistance in the arc circuit varies between wide limits, the welding current itself will not fluctuate. Selection of the best type of welding plant for any particular duty is a matter for expert guidance.

JOINTS

Fig. 3 shows the different types of welded joint in common use today. Selection of the type of joint depends upon whether the load is in tension or compression; whether bending, fatigue or impact stresses are present; and the manner in which the load is applied;—steady, variable or sudden. The cost of joint preparation and of welding are factors which also need consideration.

Fig. 3.



The square butt joint is suitable for all usual loads, demanding complete fusion with the parent metal, especially where the load is intermittent and therefore likely to cause fatigue. The base metal for a butt weld must be of good weldable quality, since a considerable amount of it is melted during welding. The square butt joint is generally restricted to a thickness of $\frac{1}{4}$ in. or lighter when a metal electrode is used for welding and for a plate of $\frac{3}{8}$ in. or lighter when using a carbon electrode or some automatic process with a metallic electrode. The square butt joint is cheap because it is simple to prepare and easy to weld. The edge preparation is very simple, with the plate square at the edges and the edges matching with a gap between the plates which varies according to the thickness.

The single vee butt joint is generally used for $\frac{1}{4}$ in. or heavier plate, although it is often used for thinner plate. Preparation is more expensive than the simple square butt joint, and more electrode is consumed. The double vee butt joint is used for very thick plates and for work which can be welded from both sides. Although cost of preparing the joint is higher than for a single vee butt joint, the double vee requires about half as much electrode. Cost of machining must be balanced against cost of welding and this will determine selection of the most suitable joint.

A double fillet square tee joint is similar to the square butt joint in that no machining is required. This joint is employed for all ordinary plate thicknesses, especially for joints which impose longitudinal shear on the welds. The edge joint is used for joining plates of $\frac{1}{4}$ in. thickness or even lighter. But this type of joint is not suitable for severe loads. The plug weld is suitable for joining plates which have to withstand only light loads, and for this purpose is economical. A pair of lap fillet welds make a very suitable joint for a pair of plates.

(To be continued)

INTEREST *(continued from page 323)*

A NEW BUILDING GLASS is being shown by Messrs. Chance Brothers Ltd., at the Ideal Home Exhibition.

•

TWO NEW ELECTRIC FIRES are being shown by Belling and Company at Olympia One incorporates a mercury switch which automatically cuts off current if the fire is upset.

An improvement to one of the firm's electric cookers is also demonstrated. The cooker is now mounted on concealed wheels with automatic brake. The device enables the cooker to be pulled clear of the wall for cleaning and redecoration and also gives flexibility in placing kitchen fittings.

•

AMONG THE EXHIBITS on the Stand of the Coal Utilisation Joint Council at the Ideal Home Exhibition, Olympia, is a new fire, 12 in. wide, which will heat a room of 2,000 cubic feet, supply the domestic hot water and provide some warmth in other parts of the house by means of two small radiators. The fire can be operated so that the flames go downwards to burn the smoke-producing elements of the coal. A polished metal reflector fitted round the fire opening above the fire level deflects the heat to the front of the hearth. The fire will burn any type of solid fuel.

Mr. J. C. Cox, secretary and registrar of the Building Apprenticeship and Training Council addressed apprentice prizewinners at the L.M.B.A. headquarters on March 2.

BRITISH PLYWOOD may be in short supply according to an article in the Financial Times. Apart from recently increased demands there is a shortage of raw material and there is a limit on the amount of plywood which can be imported. At the same time the expected demand for plywood for building has not developed to anything like the extent expected.

THE EFFECT of increased wages on the cost of building might be considered in two ways said Mr. Stephen Hudson, President of the NFBTE, recently. The first was purely arithmetical. It was easy to multiply the number of hours worked by the million or more men employed on building operations by 2½d. and to say that that would be the extra cost. But Mr. Hudson maintained that was the wrong approach. By and large, he said, the industry is composed of patriotic citizens who, like their leaders, realize that it is the customer who foots the bill of any wages increase. It was the duty of all employed in the industry to increase output so that little or none of the wages increase would be reflected in costs.

•

METAL GOODS FOR EXPORT may now be exempted in certain cases from the prohibition on manufacture announced by the Board of Trade and Ministry of Supply in February. The prohibition took effect from March 1.

Applications to manufacture for export goods on the prohibited list should be made by the manufacturer who is either himself an established exporter of the goods or who seeks permission to produce the goods to the order of an established exporter. Applications for licences to manufacture should be made in writing to

The new Hall of Engineering and Electricity at the Lyons International Fair which takes place between March 31 and April 9.

the Regional Offices of the Board of Trade or of the Ministry of Supply, depending under which Order the goods concerned are included.

Applications must normally satisfy the following tests:

(a) The export value (f.o.b.) of the finished goods, as compared with the value of the contained copper, brass, zinc or their alloys shows a conversion factor of:—
  (i) at least 15 times in the case of exports to the dollar area and Sterling Commonwealth countries;
  (ii) at least 50 times in the case of exports to other markets.

(b) It is established, by past trade, definite enquiries or from orders, that sales of the goods can be made and that the opportunities in the market are not purely temporary due to scarcity of metal in the importing country. Applicants may be required subsequently to produce evidence that the permitted goods have been exported to the market specified on the licence.

(c) It is known that import licences, where these are required, will be granted for them.

While these rules will normally be applied, applications will have individual consideration and in the case of exports to North America there may be applications which, although not satisfying these tests, may be granted by reason of special considerations justifying exceptional treatment.

•

MR. E. H. HURLSTON, F.I.R.I., superintendent of technical services at Dunlop's Speke factory, has been appointed their factory technical manager in Manchester. He will be succeeded at Speke by Mr. W. A. Clarke, B.Sc., technical manager of precision components there.

•

AT THE UTRECHT SPRING FAIR (April 3-12) four large exhibition halls are reserved for firms specializing in building materials, builders' hardware, building construction, floor, roof and wall coverings, concrete construction, etc. A large open air space will be occupied by machines for the building trade and road-construction. Among new machines to be demonstrated in Utrecht are roadbuilding machines, cranes, and concrete mixers.

•

JUDGMENT was given for the defendant recently when A. Vigers and Sons and Company, the flooring contractors sued for £65 12 0 for work done and materials supplied for a wood block floor.

The defendant's case was that, having accepted samples of beech block, the finished floor varied in colour and contained knots.

Mr. James Chapman, registered architect, stated that to make a first class job the floor would have to be taken up and relaid.

OFFICE BOOKSHELF

Domestic Hot Water

The main theme, although not quite convincing to those who are not entirely electricity minded, of "Domestic Water Heating" by Donald Grierson (Iliffe, price 25s.) is an endeavour to persuade the reader that electric water heating, if the system is properly designed, is not only convenient but also inexpensive. Apart from the merits of the costs discussion, there is much in the volume that is well worth while as it contains a wealth of very useful information in the way of basic knowledge contributing to efficient installation of hot water apparatus heated by various means. It refers especially to the combination of immersion heaters in conjunction with solid fuel boilers. Among the many facts and much information given as guidance to efficient systems are such points as the cost of dripping taps (equivalent to as much as 245 kW per quarter!!), the effect of flow in pipes and the factors which cause loss of head such as bad shapes of junctions, bends and elbows and useful guidance on pipe sizing. All those who have to design and install hot water systems, especially those responsible for the normal small domestic systems, should read this book as it will prove to be very helpful to their clients as, if the recommendations are followed, the hot water supply should be really efficient.

Prestressed Concrete

As yet few good books on this subject have appeared but "Prestressed Concrete" by Gustave Magnel (Concrete Publications, price 15s.) is already one of authority and it is good to see that a second edition is now available. This new edition is considerably revised and enlarged and contains the results of further testing and development. The book opens with simple explanations of the principles of prestressed concrete and descriptions of the methods adopted for pre-stressing. This information is followed by chapters on design of statically-determinate beams, continuous structures and tests on beams, with further chapters on creep of steel and concrete, buckling of members and the effect of time and load. The two final chapters on applications including that on precast prestressed products, are greatly extended and give a clear insight into modern practice. Those who have a reasonably working knowledge of concrete calculations should have no difficulty in following the contents as the book is written in good clear technical English on which the Belgian author should be congratulated.

Surveying

Some months ago a review of the complementary volume on surveying instruments appeared in these notes. The second part, "Principles of Surveying," by J. Clenning (Blackie 20s.) has now been issued. Like the forerunner it is efficient and comprehensive and is intended for the engineer-surveyor. Not only does it cover the more straightforward work of the surveyor but it has chapters on ground and air photographic surveying, topographical and hydrographical surveying and on areas and earthworks quantities. The book is prepared primarily for the assistance of students taking the surveying examination of the Institution of Civil Engineers but it should prove of equal value to all interested in this subject.

Timber

"Colonial Timbers," by C. W. Bond (Pitman 30s.) gives some fifty pages of scientific explanations relating to timber generally, which is followed by one page descriptions of forty-six of the better known and more readily available colonial timbers, each illustrated by a coloured plate. The coloured plates are reasonably good reproductions of typical specimens of each timber and should be very helpful to those who cannot get together a collection of actual specimens. The accompanying matter gives a general description of each timber, its workability, suitable final treatment and a guide to its applications. It is a pity that the volume has had to be confined to colonial timbers but perhaps the author will take his work a step further and cover the Commonwealth timbers and even those new timbers from other sources which are now generally available for use in this country. The introductory information is rather sketchy and is of small interest to architects, builders and handicraft teachers to whom the book is in part addressed but the descriptions and coloured plates should prove very helpful to them as a means of gaining information on a number of varieties.

The Law

"An A.B.C. of Public Health Law," by J. F. Garner (The Sanitary Publishing Co. 15s.) is a book by the legal editor of "Municipal Engineering," and brings a wide knowledge of Public Health law to the assistance of the professional health technician. The book is intended primarily for Local Authority engineers and sanitary inspectors, but the contents are likely to be helpful to all who need to know about public health. The wide range of subjects, from animals through dust-bins, factories, housing, milk and dairies, sanitary accommodation to yards and passages, are dealt with in alphabetical order; in each there is firstly a summary of the legislation which is followed by some practical notes in the form of questions and answers. The book should prove invaluable as an assistance to the memory and to provide a means of quick reference, especially to sanitary inspectors whose duties now cover so many and so diverse a collection of subjects.

CONTRACT • NEWS •

*Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.*

OPEN

BUILDING

ATHERTON U.C. (a) 44 dwellings. (b) Messrs. J. C. Prestwich & Sons, Bradshawgate Chambers, Leigh. (c) 2 Gns. (d) Mar. 22.

* * *

AUSTRALIA—STATE HOUSING AUTHORITY, TASMANIA. (a) Supply, shipment and erection of 1,000 dwellings, with site works. (b) Agent-General for Tasmania, 467 Strand, W.C.2. (e) Apr. 30.

* * *

BARNSLEY B.C. (a) 3 pairs of houses on New Lodge Estate. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) Mar. 27.

* * *

BERKSHIRE C.C. (a) Re-roofing and part reconstruction following damage by fire of Institute of Further Education, at Boyn Hill House, Maidenhead. (b) County Architect, Wilton House, Parkside Road, Reading. (c) 2 Gns. (e) Apr. 5.

* * *

BEDFORDSHIRE STANDING JOINT COMMITTEE. (a) Police house with office and garage on sites at Ravensden, Shefford, Pavenham, and Tempsford, a house and office at Whipsnade, and a pair of houses at Kempston. (b) County Architect, Shire Hall, Bedford. (d) Mar. 23.

* * *

BOURNEMOUTH B.C. (a) 6 pairs of houses and pair of bungalows on Wimborne Road, Kinson. (b) Borough Architect, (Room 98), Town Hall. (c) 2 Gns. (e) Mar. 31.

* * *

BOURNEMOUTH B.C. (a) 2 pairs of houses and 2 blocks of 4 houses on Wimborne Road site, Kinson. (b) Borough Architect, (Room 98), Town Hall. (c) 2 Gns. (e) Mar. 31.

* * *

BRIDGNORTH R.C. (a) 34 houses, with roads and sewers, at Aveley. (b) Henry Vale & Sons, 21 Waterloo Road, Wolverhampton. (c) 3 Gns. (d) Mar. 17.

* * *

BRIGHTON B.C. (a) 25 dwellings on Section 3F, and 37 dwellings on Section 31 of Parkside Estate Extension, Coldean. (b) Borough Engineer, 26-30 King's Road. (c) 2 Gns. each scheme. (e) Apr. 3.

* * *

BUCKS STANDING JOINT COMMITTEE. (a) 5 pairs of houses and one house at Aylesbury. Pair of houses and one house at Wolverton. Pair of houses at High Wycombe. One house at Farnham Royal. For police and fire personnel. (b) County Architect, County Offices, Aylesbury. (c) 2 Gns. each contract. (d) Mar. 21. (e) Apr. 13.

* * *

***BEDFORD B.C.** (a) Sewers and road foundations on housing site at Eastcotts Road. (b) Borough Engineer and Surveyor, Newnham House, Horne Lane. (c) 1 Gn. (e) Apr. 2. 10 a.m. See page 39.

* * *

CANTERBURY C.C. (a) 90 houses on London Road site. (b) City Architect, Municipal Bldgs., (c) 2 Gns. (e) Apr. 4.

* * *

CROYDON B.C. (a) Alterations and additions to 17 Sylvan Road, Upper Norwood. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) Apr. 2.

* * *

***ESSEX RIVERS CATCHMENT BOARD** (a) Demolition and removal from site of Sluice Cottage, Holland-on-Sea. (b) The Engineer, Essex Rivers Catchment Board, Essex Rivers House, Springfield Road, Chelmsford. (e) Apr. 14. See page 39.

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EBBW VALE U.C. (a) Garage at the Council yard. (b) Council's Architect, Council Offices, The Walk. (c) 3 Gns. (e) Mar. 28.

* * *

GOOLE B.C. (a) Erection including painting and electrical work of 31 houses and 8 bungalows at Western Road, Halifax Avenue, etc., for Contract No. 13, and 23 houses and 2 bungalows at Empson Avenue, for Contract No. 14. (b) Borough Surveyor, Municipal Offices. (c) 2 Gns. (e) Mar. 28.

* * *

HUNTINGDON C.C. (a) Primary school at Stanground, near Peterborough. (b) County Architect, County Buildings. (c) 2 Gns. (e) Mar. 31.

* * *

IPSWICH B.C. (a) Block of 24 flats on Ulster Avenue site. (b) Borough Surveyor, 19 Tower Street. (c) 3 Gns. (d) Mar. 20. (e) Apr. 19.

* * *

LITTLEBORO' (LANCS). (a) 13 houses on Blackstone Edge Road site, for Robin Hood Housing Association Ltd. (b) A. W. Berry, Advisor to Association, c/o Fothergill & Harvey Ltd., Littleboro'.

* * *

LONDON—STEPNEY B.C. (a) Structural repairs at 4 Argyle Road; 136 Jamaica Street; 201 Bancroft Road; and a new flank wall at 20 Fournier Street. (b) Chief Technical Officer for War Damage, 191-193 Commercial Road, E.1. (c) 2 Gns. (e) Mar. 24.

* * *

LOWESTOFT B.C. (a) Additional art and domestic science rooms at Yarmouth Road Secondary Grammar School. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) Mar. 26.

* * *

NORTHERN IRELAND HOUSING TRUST. (a) 202 dwellings with roads and sewers at Warren Park, Lisburn, Co. Antrim. (b) Trust Offices, 12 Hope Street, Belfast. (c) £3. (e) Apr. 4.

* * *

NOTTINGHAM C.C. (a) Mental health/occupational centre at Bulwell. (b) City Engineer, The Guildhall. (c) £2. (e) Mar. 28.

* * *

OLDBURY B.C. (a) 24 houses, 28 maisonettes, 10 aged persons' dwellings and 10 single persons' dwellings, on Titford Estate, Rowley Regis. (b) T. Dunkley Hogg, 1 Church Street, Oldbury. (c) 2 Gns. (e) Mar. 30.

* * *

OSSETT B.C. (a) Adaptation of Isolation Hospital at Storrs Hill into three dwellings. (b) Borough Surveyor, Town Hall. (c) 1 Gn. (e) Mar. 26.

* * *

PADIHAM U.C. (a) 16 bungalows on St. Giles Street Estate. (b) Council's Surveyor, Town Hall. (c) 2 Gns. (e) Apr. 6.

* * *

ST. HELENS B.C. (a) 86 houses and 16 flats, Contract No. 1973. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) Apr. 11.

* * *

ST. HELENS B.C. (a) Block of 6 shops with maisonettes above at Bassenthwaite Avenue, Moss Bank, Contract No. 1974. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) Apr. 11.

* * *

SALCOMBE U.C. (a) Block of 4 flats at Knowle Road. (b) Council's Surveyor, Council Offices. (c) 1 Gn. (e) Mar. 31.

* * *

SCOTLAND—EDINBURGH C.C. (a) Alterations and additions to Canongate Tolbooth. (b) City Architect, City Chambers, Edinburgh, 1. (c) Mar. 24. Separate trades.

* * *

STOURPORT-ON-SEVERN U.C. (a) 32 houses and 3 houses on Walshes Farm Estate. Scheme No. 5. (b) Messrs. Godwin, Clist & Greenway, Bank Buildings, Kidderminster. (c) 33 Gns.

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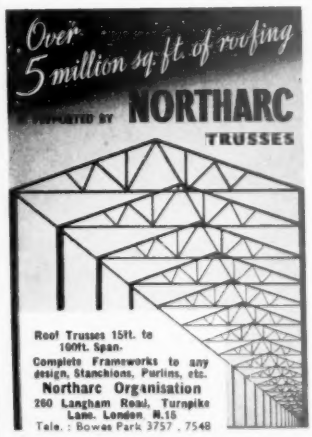
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SOUTHAMPTON B.C. (a) Block of 4 houses on Millbrook Estate. (b) Borough Engineer Civic Centre. (c) 1 Gn. (d) Mar. 19. (e) Apr. 16.

* * *

WIDNES B.C. (a) 76 dwellings on Section 3 of Crow Wood Estate. (b) Borough Architect, Brendan House, Widnes Road. (c) 2 Gns. (e) Apr. 4.

* * *

WREXHAM B.C. (a) 24 houses and 8 flats on Barons Road site. (b) Borough Engineer, 31 Chester Street. (c) 2 Gns. (e) Mar. 26.

* * *

WATFORD R.C. (a) 30 houses on Toms Lane site, Bedmond, Abbots Langley. (b) Council's Clerk, Wynyard House, Langley Road. (c) 1 Gn. (e) Apr. 2.

* * *

WATFORD R.C. (a) 6 houses on Church Lane site, Sarratt. (b) Council's Clerk, Council Offices, Wynyard House, Langley Road. (c) 1 Gn. (d) Mar. 21.

* * *

WEST SUSSEX C.C. (a) Canteen kitchen and dining room at High School for Girls, Horsham. (b) County Architect, County Hall, Chichester. (d) Mar. 20.

* * *

WELSH REGIONAL HOSPITAL BOARD. (a) Erection of separate high and low grade blocks on grounds of Hensol Castle Mental Deficiency Institution, Pontyclun, Glam. (b) Secretary to Board, Temple of Peace and Health, Cathays Park, Cardiff. (d) Mar. 19.

* * *

YORK C.C. (a) Alterations and renovations to house block at The Grange, Huntington Road. (b) City Engineer, Guildhall. (c) £1. (e) Mar. 29.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

BUILDING

ACTON B.C. (1) 18 flats. (2) Creffield Road. (3) John Balaam Ltd., South Harrow. (4) £23,959.

* * *

BRIGHTON B.C. (1) Bathing station. (2) West Pier. (3) McKellar & Westerman Ltd., Church Road, Hove. (4) £12,709.

* * *

DURHAM C.C. (1) Primary school. (2) Newton Aycliffe. (3) G. Stephenson, Bishop Auckland. (4) £60,000.

* * *

DURHAM C.C. (1) Grammar Technical School. (2) Durham. (3) G. Dougill & Sons Ltd., Darlington. (4) £236,991.

* * *

DURHAM C.C. (1) Workshops, laboratories, etc. (2) Hebburn Technical School. (3) J. Jackson & Sons Ltd., Newcastle-upon-Tyne. (4) £138,361.

* * *

HULL. (1) Four-storey reinforced concrete building. (3) Sir Robert McAlpine & Sons (Newcastle-upon-Tyne) Ltd., Star Buildings, Newcastle. Architects: T. P. Bennett & Son, 43 Bloomsbury Square, London, W.C.1.

* * *

ISLE OF WIGHT C.C. (1) Second phase of secondary school. (2) Cowes. (3) Westbridge Construction Co. Ltd., Newport Road, Cowes. (4) £47,914.

* * *

KENSINGTON B.C. (1) 12 flats. (2) St. Mark's Baptist Chapel site. (3) A. T. Rowley (London) Ltd., Lordship Lane, London, N.17. (4) £13,444.

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GOSPORT B.C. (1) 89 houses. (2) Rowner Estate. (3) Hawkins Bros. (Gosport) Ltd., Anns Hill Road, Gosport. (4) £116,045.

* * *

LONDON COUNTY COUNCIL. (1) Secondary school. (2) Kingsmead Estate, Hackney. (3) Chas. S. Foster & Sons, Loughton, Essex. (4) £53,160. (1) War damage repairs. (2) Dalston Secondary School. (3) J. M. Hill & Sons Ltd., Wembley. (4) £37,271. (1) Repair and adaptation. (2) Cobham Hatchford Park, Surrey. (3) R. Holford & Co. Ltd., Guildford. (4) £35,460.

* * *

LEEDS E.C. (1) Beckett Primary School. (3) N. B. Bell & Co. Ltd., Frankland Terrace, Leeds, 7. (4) £103,162.

* * *

LINDSEY C.C. (1) Secondary school. (2) Spilsby. (3) John Dutton, Skegness. (4) £69,196.

* * *

NOTTINGHAMSHIRE E.C. (1) Junior school. (2) Kingswell, Arnold. (3) W. J. Simms, Sons & Cooke Ltd., Sherwood, Nottingham. (4) £72,490.

* * *

PORTLAND U.D.C. (1) 76 houses, 20 flats. (2) Verne Common. (3) Reema Construction Ltd., Milford Manor, Salisbury. (4) £137,770.

* * *

PONTYPOOL. (1) Reinforced concrete foundations etc. for new factory for British Nylon Spinners Ltd. (3) Cementation Co. Ltd., Doncaster. (4) About £600,000.

* * *

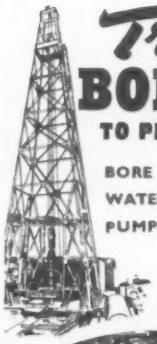
ROTHERHAM B.C. (1) 143 houses. (2) Kirkholt Estate. (3) O. Weaver & Sons Ltd., Mexborough, Yorks.

* * *

ST. PANCRAS B.C. (1) 16 flats. (2) Toriano Avenue. (3) William Willett Ltd., Sloane Square, S.W. (4) £39,563.

* * *

NORFOLK E.C. (1) Secondary school. (2) Hunstanton. (3) F. W. Shanks Ltd., Park Road, Hunstanton. (4) £140,463.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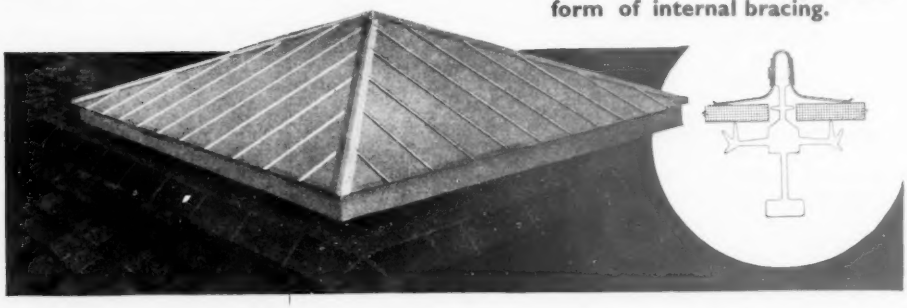

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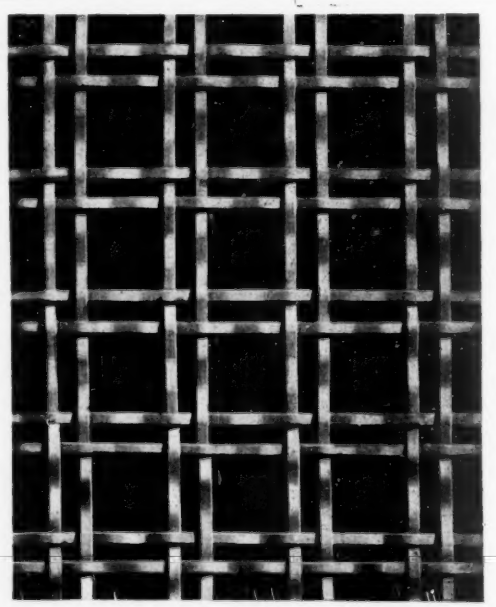

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Fig. 1. - Rig and Gear for applying impact tests.

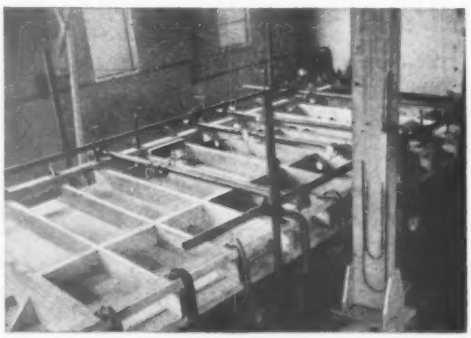

Fig. 2. - Rig for static loading tests. (Floor section is inverted, with captive airbag beneath for loading.)

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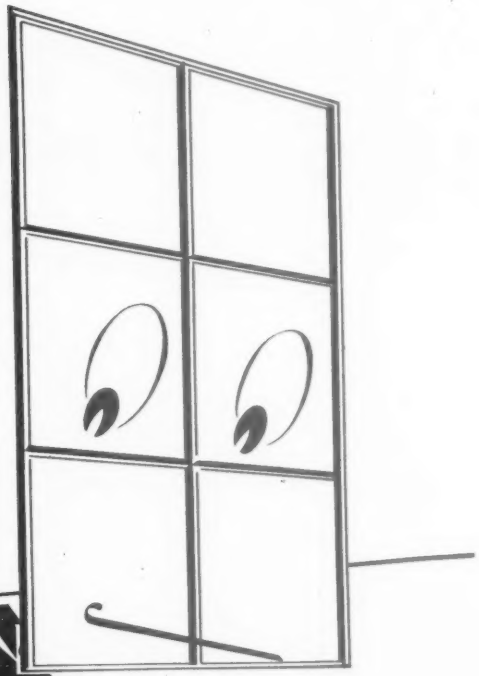

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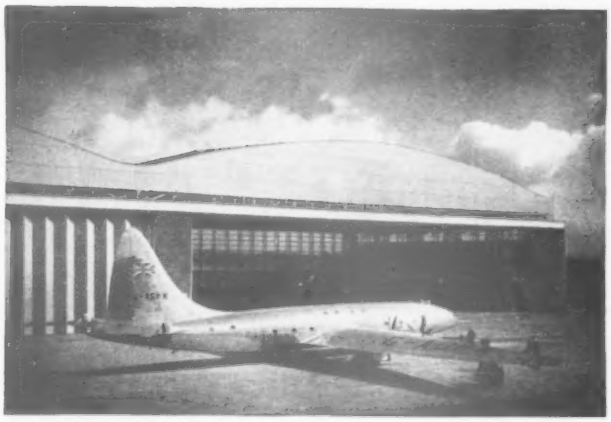

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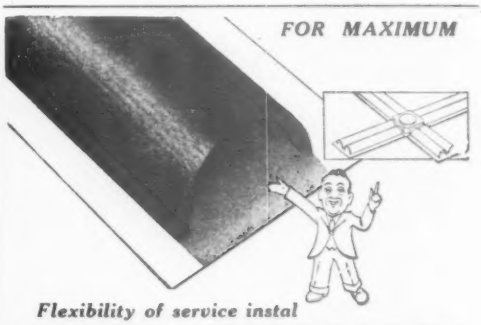

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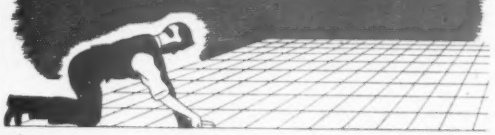

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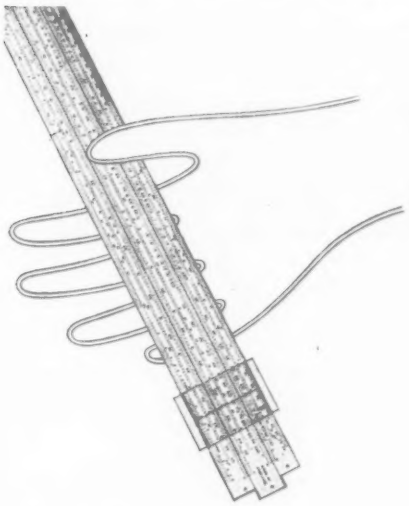

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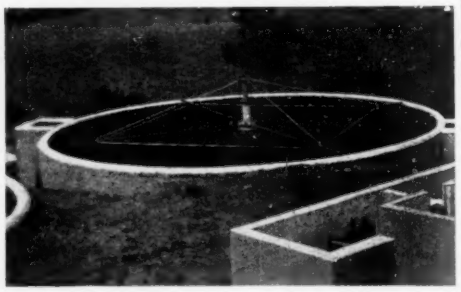

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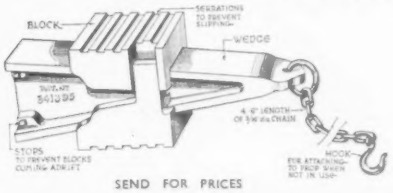
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APPLICATIONS are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats) and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816). [0101

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ARCHITECT'S DEPARTMENT.

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Applicants should have a thorough knowledge of the building trade, the erection of multi-storeyed flats, of steel-frame building and pile foundations. Membership of the Incorporated Clerk of Works Association of Great Britain would be an advantage. The salary will be £12 per week.

Applications, stating age, qualifications and previous experience, together with the names of three persons to whom reference may be made, should be enclosed in an envelope endorsed "Clerk of Works" and must be received by me not later than Thursday, 29th March, 1951.

Canvassing, directly or indirectly, will be deemed a disqualification; and candidates must disclose in writing whether to their knowledge they are related to any member or holder of any senior office under the Council. Candidates who fail to do so will be disqualified and, if appointed, will be liable to dismissal without notice.

FARRA CONWAY, Town Clerk.

Town Hall, Great Yarmouth.
10th March, 1951. [5307

BOROUGH OF CHATHAM.

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APPLICATIONS are invited for the appointment of CHIEF ASSISTANT ARCHITECT within Grade VII (£635-£710).

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Applicants should be good draughtsmen, possess a sound knowledge of building construction, and be capable of preparing working drawings under supervision.

Housing accommodation is not immediately available, but the Council will, if necessary, assist the successful applicants to obtain accommodation so far as they are able, but it must be distinctly understood that the Council do not guarantee to find either a house or living accommodation.

Applications, stating age, qualification and experience, accompanied by copies of not more than three recent testimonials, and suitably endorsed, must be delivered to the City Engineer (Mr. F. J. Smith, M.B.E., A.M.I.C.E., Reg. Architect) at the Town Hall, Peterborough, not later than 22nd March, 1951.

Applicants must disclose whether they are related to any member or senior official of the authority.

C. PETER CLARKE, Town Clerk.

Town Hall, Peterborough.
February, 1951. [5304

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Tenders, in plain sealed envelopes, endorsed "Housing Site at Eastcotts Road," and addressed to the Chairman of the Housing Committee, must be delivered to the undersigned not later than 10 a.m. on Monday, 2nd April, 1951.

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1st March, 1951. [5306

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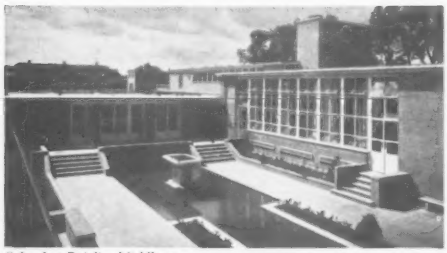

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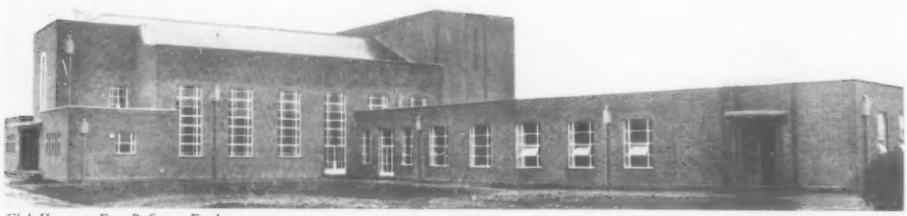

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